

AR TARGET SHEET

The following document was too large to scan as one unit, therefore, it has been broken down into sections.

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SECTION: 4 OF 4

DOCUMENT #: DOE/RL 2002-21 Rev 000

TITLE: CY 2001 Hanford Site Mixed
Waste Land Disposal Restrictions
Report Volumes 1 and 2

APPENDIX C
POTENTIAL MIXED WASTE

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APPENDIX C

POTENTIAL MIXED WASTE

The origin and definition of potential mixed waste is discussed in Section 2.3 of this volume. The content of each column is defined here.

Table C-1. Potential Mixed Waste Table Explanation.

Column	Column Title	Content Definition
A	Company, project	Self-explanatory.
B	Common name or description	Self-explanatory.
C	Facility number	Self-explanatory.
D	Solid "waste" with potential for mixed "waste" not integral to the building or structure (no use)	"Stuff" (e.g., equipment, materials) that is not currently in use and for which no future use is currently known, but for which the final disposition has not yet been determined. The "stuff" is not currently considered mixed waste and may or may not currently be contaminated, but includes items with the potential for becoming mixed waste, depending on future decisions regarding the ultimate use and disposition. "Stuff" integral to the building is not to be included. "None" in this column indicates the project/facility contains no "stuff" known to be in this category.
E	Materials with potential to become solid waste and subsequently mixed waste (in standby, possible use)	"Stuff" (e.g., equipment, materials) that is currently in "standby" and may at some point, if it becomes waste, designate as mixed waste. Provide details for standby equipment/material that has a clear use or path for reuse/recycling, but may at some point, if/when it becomes waste, designate as mixed waste. A future use must be documented for material to be included in column E of the Potential Mixed Waste Table. Documentation of the future use of items in column E shall be available upon request. Columns D and E encompass <u>contents</u> of buildings and structures only. Floor sweepings, dust, etc., are not included. The structures themselves, including contaminated walls, floors, etc., are not included. Equipment and chemicals that are in use are not included.
F	DOE assessment of storage methods	Indicate when the DOE assessment for the purpose of meeting LDR report requirements is scheduled. Provide an alternative explanation if required (e.g., the assessment completion date, key facility in surveillance and maintenance phase, further DOE LDR assessment not needed).
G	Schedule information	Include schedule information relative to materials detailed in these columns. Include references to pertinent documents (closure plans, RODs) and identify any applicable operable units or other Tri-Party Agreement drivers for remediation. Provide a date for completing the data gap plan, if applicable. Also, for major negotiations related to the path forward for the potential mixed waste, such as the start of facility transition or deactivation, provide a date for starting the negotiations with the regulators.

Table C-1. Potential Mixed Waste Table Explanation.

Column	Column Title	Content Definition
H	Integrating factors	Include factors that should be considered when determining when negotiations should occur. These include factors such as relative threat to human health and the environment of no action, ties to other activities such as operable unit remediation, ties of action to facility missions, etc.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc. Hanford Site Operations	C8S5 (CAT) Substation	252U	Transformer	None	DOE assessment: 1 st quarter CY 2005	Not likely to be mixed waste. Planned determination date is FY 2002. Data gap plan: FY 2002. Starting negotiations: NA, material will be dispositioned per current practices if declared waste.	Oil has been drained, no PCBs. Samples from paint on transformer have been tested for lead TCLP. Paint fails TCLP, but transformer as a whole not likely to be regulated for lead TCLP when considered in context with entire waste matrix.
Fluor Hanford, Inc., Nuclear Material Stabilization Project	216-Z-9 Crib Soil Removal Glovebox (inactive)	216Z9A	Soil Removal Glovebox. Air compressor (potential for regulated oil). Residual contamination within glovebox (potential for mixed wastes during cleanout). Inactive ventilation exhaust ductwork (potential for residual contamination). Note: Glovebox probably will function as containment when conducting facility cleanout/transition activities.	None	DOE assessment: Completed 3 rd quarter CY 2001	Facility to be addressed during deactivation/transition of PFP. Data gap plan: To be determined in negotiations. Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri- Party Agreement C/R 87-07 are in progress).	Data gaps not filled before negotiations because of negotiation timing.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., Nuclear Material Stabilization Project	Waste Incinerator Facility (inactive)	232Z	Incinerator and Leaching Gloveboxes. Residual contamination within gloveboxes (potential for mixed waste during cleanout). Inactive portions of ventilation exhaust ductwork and control equipment (potential for residual contamination). Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities.	None	DOE assessment: Completed 3 rd quarter CY 2001	Baseline Milestone due date for completing Deactivation/Transition of the 232-Z Facility is FY 2006 (<i>Integrated Program Management Plan for Decommissioning of the Plutonium Finishing Plant Nuclear Material Stabilization Project</i> , HNF-3617, Rev. 1, Draft). Data gap plan: To be determined in negotiations. Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri- Party Agreement C/R 83-01-02 are in progress).	Data gaps not filled before negotiations because of negotiation timing.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., Nuclear Material Stabilization Project	Plutonium Finishing Plant	234-5Z	Inactive process tanks, piping, and control equipment (Remote Mechanical "A" & "C" Lines). Containment gloveboxes (Remote Mechanical "A" & "C" Lines). Lead-lined gloves (some older gloves may designate as TCLP leachable). Radioactive Acid Digestion Test Unit (RADTU) Gloveboxes (potential for residual contamination during cleanout). Inactive portions of HVAC exhaust ductwork (potential for mixed wastes during cleanout). Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities. "Residues" (SS&C, ash, other combustibles, compounds, miscellaneous oxides, Mixed oxides and alloys, including Pu alloys, <30 wt. percent Pu + U). Note: These materials were reported as potential solid waste to Ecology in April 2000 (ref: Memo, DOE-RL to Ecology, #00-OSS-273, dated April 3, 2000).	Residues and low-grade SNM solids.	DOE assessment: Completed 3 rd quarter CY 2001	Baseline Milestone due date for completing deactivation/transition of the 234-5Z Facility is FY 2016 (IPMP, HNF-3617, Rev. 1, Draft) Data gap plan: To be determined in negotiations. Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri- Party Agreement C/R 83-01-02 are in progress).	Data gaps not filled before negotiations because of negotiation timing.

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Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., Nuclear Material Stabilization Project	Plutonium Reclamation Facility	236Z	Pu nitrate reclamation tanks, piping, and control equipment. Miscellaneous treatment tanks, piping, and control equipment. Containment gloveboxes (reclamation and miscellaneous treatment). Chem. prep tanks, piping, and control equipment. Residual contamination within inactive process equipment and gloveboxes (potential for mixed waste during cleanout). Potential for liquids within inactive tanks, vessels, and piping. Miscellaneous tools and maintenance equipment located within canyon cell. Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities.	None	DOE assessment: Completed 3 rd quarter CY 2001	Baseline milestone due date for completing deactivation/transition of the 236-Z Facility is FY 2016 (IPMP, HNF-3617, Rev. 1, Draft). Data gap plan: To be determined in negotiations. Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri-Party Agreement C/R 83-01-02 are in progress).	Data gaps not filled before negotiations because of negotiation timing.
Fluor Hanford, Inc., Nuclear Material Stabilization Project	MW Treatment and Storage Tanks	241Z	Tank D-6, associated piping, line flushing and sludge cleanout. Tank D-6 deactivated in 1972 because of failure. Waste transferred from tank and tank/piping isolated.	None	DOE assessment: Completed 1st quarter CY 2001	Tank D-6 and associated piping to be handled during closure of the 241-Z TSD Unit. Baseline milestone for completing transition of 241-Z is FY 2012. Tank D-9 to be completed by FY 2015 (IPMP, HNF-3617, Rev. 1, Draft). Data gap plan: To be determined in negotiations. Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri-Party Agreement C/R 83-01-02 are in progress).	Data gaps not filled before negotiations because of negotiation timing.

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Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., Nuclear Material Stabilization Project	PFP Settling Tanks	241-Z-361	Tank containing waste from past practices	None	DOE assessment: 1 st quarter CY 2006	CERCLA past-practice unit scheduled for cleanup planning by 2006 and cleanup in FY 2011 (IPMP, HNF-3617, Rev. 1, Draft) Data gap plan: To be determined in development of the Environmental Evaluation/Cost Analysis. Starting negotiations: TBD pending outcome of Environmental Evaluation/Cost Analysis.	None
Fluor Hanford, Inc., Nuclear Material Stabilization Project	Waste Treatment Facility (inactive)	242Z	Miscellaneous process tanks, first floor and mezzanine level. Process piping. Containment gloveboxes. Potential for liquids within tanks, vessels, and piping. Residual contamination within gloveboxes, tanks, and piping (potential for mixed waste during cleanout).	None	No assessments. Facility is sealed currently because of high levels of radioactive contamination resulting from cation exchange column explosion, August 1976. DOE assessment: NA	Baseline date for completing deactivation/transition of the 242- Z Facility is FY 2016 (IPMP, HNF-3617, Rev. 1, Draft). Data gap plan: To be determined in negotiations Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri- Party Agreement C/R 83-01-02 are in progress).	Data gaps not filled before negotiations because of negotiation timing.
Fluor Hanford, Inc., Nuclear Material Stabilization Project	SNM Storage/ Repackaging	2736Z	"Residues" (SS&C, ash, other combustibles, compounds, miscellaneous oxides, mixed oxides and alloys, including Pu alloys, <30 wt. percent Pu + U). Note: These materials were reported as potential solid waste to Ecology in April 2000 (ref: Memo, DOE-RL to Ecology, #00-OSS-273, dated April 3, 2000).	Residues and low-grade SNM solids.	DOE assessment: Completed 3 rd quarter CY 2001	Baseline date for completing deactivation/transition of the 2736- Z Facility is FY 2016 (IPMP, HNF-3617, Rev. 1, Draft) Data gap plan: To be determined in negotiations Starting negotiations: Deactivation/transition milestones subject to Tri-Party Agreement negotiations (negotiations and Tri- Party Agreement C/R 83-01-02 are in progress).	Data gaps not filled before negotiations because of negotiation timing.

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A	B	C	D	E	F	G	H
Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., River Corridor Project	Heavy Equipment Staging Area	2711E & 4734D	None	Heavy equipment components	DOE assessment: 1 st quarter CY 2005 for 2711E. 3 rd quarter CY 2006 for 4734D.	The equipment is being actively managed for reuse/recycle through 2006. Data gap plan: 1 st quarter CY 2006 for 2711E, 3 rd quarter CY 2007 for 4734D Starting negotiations: 2006 (if necessary)	Equipment is actively managed. Has previously been discussed with Ecology.
Fluor Hanford, Inc., River Corridor Project	Rail Car Staging Area	212R Rail Spur, and PUREX Rail Cut	None	Rail car components (lead casks, liquids within the lead casks, bearings, and lubricants)	DOE assessment: 4 th quarter CY 2005	The equipment is being actively managed for reuse/recycle through 2006. Data gap plan: 4 th quarter CY 2006 Starting negotiations: 2006 (if necessary)	Equipment is actively managed. Has previously been discussed with Ecology.
Fluor Hanford, Inc., River Corridor Project	224-T (Includes TRUSAF)	224-T	D1: Potential for liquid in vessels, sumps and the deep cell. The cells contain two cardboard boxes that are not expected to contain mixed waste. The presence or absence of mixed waste in the 224-T cells is not documented and the potential for waste was identified in the Silver List D2: There is a glovebox/hood in a plywood enclosure (there may be vessels in the glovebox/hood), but mixed waste is not expected to be found in these items.	None	DOE assessment: 1 st quarter CY 2002	D1 and D2: Data gap plan: 4 th quarter CY 2002 Starting negotiations: 2012	The potential for MW presence in the cells is a former Silver List issue that has not been closed out.

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Fluor Hanford, Inc., River Corridor Project	231Z	231Z	Liquid in vessels and chemicals in gloveboxes.	None	DOE assessment: 1 st quarter CY 2006	Data gap plan: 1 st quarter CY 2007 Starting negotiations: TBD	The potential for MW to be present is a former Silver List issue that has not been closed out. Media that might designate as MW, if present, are expected to be contained in stainless steel vessels. It is assumed that the media, if present, are stable and pose no threat to human health or the environment.
Fluor Hanford, Inc., River Corridor Project	242-B/BL	242-B/BL	None	Lead bricks	DOE assessment: 1 st quarter CY 2007	Data gap plan: 4 th quarter CY 2008 Starting negotiations: TBD	Lead bricks are planned for disposition as scrap metal recycle.
Fluor Hanford, Inc., River Corridor Project	314	314	Large equipment previously used in the facility. Equipment might be radioactively contaminated and might also contain items such as asbestos insulation, thermostats, mercury switches, circuit boards, or lead solder that could cause all or parts of the equipment to designate as mixed waste. The extent of contamination on internal components is currently unknown.	None	DOE assessment: 1 st quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, milestone M-94-00. Data gap plan: 1 st quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas Waste Sites and Facilities Cleanup Milestones)	The schedule information in Column G is subject to change per TPA change control processes.

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Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., River Corridor Project	324	324	Shielded glovebox. Potential mixed waste residue. Former Silver List Item 11.8	None	DOE assessment: 4 th quarter CY 2002	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, Milestone M-94-00. Data gap plan: 4 th quarter CY 2003 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	Any glovebox contamination/residue is contained within the glovebox. Condition is stable and does not represent a hazard or pose a threat to human health and environment. The schedule information in Column G is subject to change per TPA change control processes.
Fluor Hanford, Inc., River Corridor Project	333 Building	333	Miscellaneous equipment, piping, and ductwork	Miscellaneous equipment, piping, and ductwork. Materials will be evaluated in the future.	DOE assessment: 1 st quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, Milestone M-94-00. Data gap plan: 1 st quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	The schedule information in Column G is subject to change per TPA change control processes.

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Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., River Corridor Project	Waste Neutralization Facility (340-Vault Tanks, Decon. Room, Control Room, Records, and Truck Dock)	340	340 Vault tank heels and clean out residues and associated equipment (valves, piping, pumps, light fixtures) may designate as MW.	None	DOE assessment: 4 th quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, Milestone M-94-00. Data gap plan: 4 th quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	The schedule information in Column G is subject to change per TPA change control processes.
Fluor Hanford, Inc., River Corridor Project	340-A Above Ground Storage Tanks	340A	340-A Tanks clean out residues and associated equipment (valves, piping, pumps, light fixtures) may designate as MW.	None	DOE assessment: 4 th quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, Milestone M-94-00. Data gap plan: 4 th quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	The schedule information in Column G is subject to change per TPA change control processes.
Fluor Hanford, Inc., River Corridor Project	Waste load-out bldg.	340B	Process piping and ancillary equipment clean out residues may designate as MW.	None	DOE assessment: 4 th quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, Milestone M-94-00. Data gap plan: 4 th quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	The schedule information in Column G is subject to change per TPA change control processes.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., River Corridor Project	3708	3708	Solid obsolete laboratory equipment	None	DOE assessment: 2 nd quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-094-01-01, Milestone M-94-00. Data gap plan: 2 nd quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	The schedule information in Column G is subject to change per TPA change control processes.
Fluor Hanford, Inc., River Corridor Project	300-RLWS	RLWS	Isolated radioactive liquid waste sewer piping and ancillary equipment residues may designate as MW.	None	DOE assessment: 4 th quarter CY 2003	Potential MW disposition will be performed in accordance with proposed TPA Change Control Form M-16-01-06, Milestone M-16-00B. Data gap plan: 4 th quarter CY 2004 Starting negotiations: Completed (see 100 Area and 300 Areas waste sites and facilities cleanup milestones)	The schedule information in Column G is subject to change per TPA change control processes.

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Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Fluor Hanford, Inc., Waste Management Project	T Plant Canyon, RR Tunnel, Head-end	221-T	For process cell inventory refer to "Historical Records for 221-T Facility," HNF-1982, as amended. Examples of inventory are jumpers, tanks, pumps, pump racks, centrifuges, fuel racks, fuel canisters, and agitators.	Items having the potential for reuse, including cover blocks, lead shielding (including portable lead walls), hand tools and tool boxes, metal ramp, chokers and slings, hoists, railroad ties, portable fences, cutters (e.g., jaws), portable pumps and hoses, impact wrenches, spill pallets, HEPA vacuums, HEPA filter and duct work, torch cart and welding cart, work bench, portable exhausters, aqueous make-up tanks, drum crusher, plasma arc cutter.	DOE assessment: 3 rd quarter CY 2005	As of December 31, 2001, 15 sections of the canyon deck had been cleaned off, 4 large pieces of equipment had been removed from the canyon, and process cell 10-L had been cleaned out (e.g., equipment removed to accommodate K-Basin sludge secondary containment system). 7 process cells are scheduled to be cleaned out in 2002 to support K- Basin sludge storage. Data gap plan: 3 rd quarter CY 2006 Starting negotiations: TBD	None

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Fluor Hanford, Inc., Waste Management Project	T Plant Canyon, Cell 11-L	221-T	Contains potential mixed waste based upon process knowledge (Cell 11-L was used for decontamination). Cell 11-L contains a 14,000-gal. oval-shaped tank. In June 2001, while surveying prospective cells for storage of K Basins sludge, it was discovered that the Cell 11-L tank contained approximately 500 gal of a green liquid. There also appeared to be dried saltcake on the sides and bottom of the tank, and the surface of the liquid. The saltcake material appeared to be the result of liquid evaporating over time. Results of field chemical screening in June 2001 and interviews with employees who were working at T Plant in the years when the cell was being used for decontamination support the conclusion that the liquid is from decontamination solutions.	None	DOE assessment: 3 rd quarter CY 2005	Separate negotiations are not necessary for Cell 11-L as disposition plans are currently being discussed within the T Plant Complex Dangerous Waste Permit Application Part B workshop. Data gap plan: 3 rd quarter CY 2006 Starting negotiations: TBD	None.
Fluor Hanford, Inc., Waste Management Project	T Plant Complex IMUSTs	292-TK-1 and 292-TK-2	292-TK-1 and 292-TK-2 consist of two stainless steel 55-gallon drums encased in concrete. These tanks contained a mixture of irradiated fuel and nitric acid. The solutions in the tanks were then neutralized with molar equivalents of sodium hydroxide.	None	DOE assessment: 3 rd quarter CY 2005	This WIDS site will be addressed as part of the CERCLA remediation activity. Data gap plan: 3 rd quarter CY 2006 Starting negotiations: TBD	Tanks are part of CERCLA remediation process, scheduled for completion of RI/FS process by Dec. 2008. Prioritization discussions have taken place (4/23/01). Specific M-13 milestone assignments anticipated by FY 2004.

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Fluor Hanford, Inc., Waste Management Project	242-A Evaporator	242A	None	Ion-exchange column	DOE assessment: Completed 4 th quarter CY 2000	The ion-exchange column is in standby and has not been declared a waste. Life extension upgrades to the 242-A Evaporator including removal of the ion-exchange column have been put on hold due to funding issues. Data gap plan: Not applicable. Starting negotiations: Negotiations, if required, are expected to begin in FY 2002.	None
Battelle Memorial Institute, Pacific Northwest	Radiochemical Processing Laboratory	325	Tank system formerly used for product materials subsequently used as feedstock for research projects. Tanks have been drained and flushed, but remain in place.	Hot cells, hoods, and gloveboxes used for radioactive materials and waste analysis and research (reused as needed for new or expanded research activities)	DOE assessment: 4 th quarter CY 2001	Data gap plan: 4 th quarter CY 2002 Starting negotiations: TBD based on data gap plan outcome	Part of an active facility; no special hazards known.
Battelle Memorial Institute, Pacific Northwest National Laboratory	Environmental Sciences Laboratory	3720	Laboratory equipment	Hoods and gloveboxes used for radioactive materials and waste analysis and research (reused as needed for new or expanded research activities)	DOE assessment: 2 nd quarter CY 2002	Data gap plan: 2 nd quarter CY 2003 Starting negotiations: TBD based on data gap plan outcome	Negotiations are currently underway. No risk-based hazards are known that would indicate a need for expedited consideration of the waste in the facility. The facility is currently active.
CH2M HILL, Hanford Group, Inc., Tank Farms	Evaporators	242-S, T	Liquids/solids in process tanks and piping, debris	None	DOE Assessment: 3 rd quarter, CY 2004	242-T and 242-S Evaporators are both forecast to be excessed and will go through the LCAM process. Data gap plan: 3 rd quarter CY 2005 Starting negotiations: FY 2005.	None

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CH2M HILL, Hanford Group, Inc.	701-A Ventilation Building	241-A-701	Mechanical equipment, e.g., HEPA filters, exhauster, etc.	None	DOE Assessment: 4 th quarter CY 2003	Data gap plan: 4 th quarter CY 2004 Starting negotiations: TBD	None
CH2M HILL, Hanford Group, Inc., Tank Farms	Double-Shell Tank Farms	241-AN, AW, AP, AY, AZ, SY	Contaminated unusable equipment, e.g., ductwork, exhausters, piping, etc.	None	DOE Assessments: Continuing	Data gap plan: The equipment will be handled in accordance with the management procedure. Starting negotiations: NA. Equipment will be taken care of on a continuous basis.	None
CH2M HILL, Hanford Group, Inc., Tank Farms	Single-Shell Tank Farms	241-A, AX, B, BX, BY, C, T, TX, TY, S, SX, U, 244-AR, 244-CR	Contaminated unusable equipment, e.g., ductwork, exhausters, piping, ion exchange columns, etc.	None	DOE Assessments: Continuing	Data gap plan: The equipment will be handled per the management procedure. Starting negotiations: NA Equipment will be taken care of on a continuous basis.	None
Bechtel Hanford, Inc., Environmental Restoration	100-B Reactor Facilities	105-B, 111-B, 116-B, 119-B, 1608-B	Miscellaneous contaminated material remains in the facility.	None	DOE assessment: 2 nd quarter CY 2004. Assessment excludes reactor.	Data gap plan: 2 nd quarter CY 2005 Starting negotiations: Tri-Party Agreement Milestone M-93-14, 6/30/03	The reactor is a key facility under Section 8.0 of the Tri-Party Agreement. Tri- Party Agreement Milestone M-93-00 addresses final disposition of all 100 Area surplus reactor buildings

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Bechtel Hanford, Inc., Environmental Restoration	100-KE and KW Reactor Facilities	167-K, 182-K, 183-K, 105-KE, 110-KE, 115-KE, 116-KE, 117-KE, 118-KE-2, 150-KE, 166-KE, 1713-KER, 105-KW, 110-KW, 115-KW, 116-KW, 117-KW, 118-KW-2, 119-KW, 150-KW, 165-KW, 166-KW, 181-KW, 183-KW, 190-KW	Miscellaneous contaminated material in the facility is being managed as part of ISS activities	None	DOE assessment: 2 nd quarter CY 2004. Assessment excludes reactor.	Waste will be generated as part of the ISS activities. Data gap plan: 2 nd quarter CY 2005 Starting negotiations: Tri-Party Agreement Milestone M-93-14, 6/30/03	The reactor is a key facility under Section 8.0 of the Tri-Party Agreement. Tri-Party Agreement Milestones M-93-21-T01 and M-93-22-T01 address ISS of 105-KW and 105-KE respectively. Tri-Party Agreement Milestone M-93-00 addresses final disposition of all 100 Area surplus reactor buildings.
Bechtel Hanford, Inc., Environmental Restoration	200 North Area	212-N, 212-P, 212-R	212-R contains an empty radiologically-contaminated burial box. The 212-N transfer bay contains 14 wooden boxes of suspected TRU nuclear fuel refabrication equipment from the 308 Building, Room 213, moved in 1982, and a single wooden box from 308 Building, Room 212, transferred in 1983. No non-rad materials have been identified in this facility.	None	DOE assessment: 4 th quarter CY 2005	Data gap plan: 4 th quarter CY 2006 Starting negotiations: TBD	None

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A	B	C	D	E	F	G	H
Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Bechtel Hanford, Inc., Environmental Restoration	B Plant	207-BA, 211-B, 212-B, 217-B, 221-B, 221-BB, 221-BF, 221-BG, 271-B, 276-B, 291-BA, 291-B, 291-BB, 291-BD, 291-BF, 291-BG, 292-B, 2711-B, 2715-B, 270-E-I (IMUST)	S&M Plan, DOE/RL-99-24, identifies the hazardous material remaining in the facility. Tank heels relate to TSD tank system and 270-E-I.	S&M Plan, DOE/RL-99-24, identifies the hazardous material remaining in the facility.	DOE assessment: NA	D & E: As described in the S&M Plan, DOE/RL-99-24, Rev 0. Data gap plan: NA Starting negotiations: Complete. Any additional negotiations will be held in accordance with Section 8.6.2 of the Tri-Party Agreement Action Plan.	B Plant is in the S&M phase of the facility decommissioning process, as described in Chapter 8.0 of the Tri-Party Agreement. Final disposition of the IMUST and B Plant will be scheduled such that the activities are performed concurrently. See location-specific data sheets for details regarding waste stored in Cell 4 and in the containment building.
Bechtel Hanford, Inc., Environmental Restoration	224-B Building	224-B	Chemicals associated with operations at the 224-B Building may exist as residual deposition in tanks. Potential waste remaining in the 224-B process cells.	None	DOE assessment: 4 th quarter CY 2006	Data gap plan: 4 th quarter CY 2007 Starting negotiations: TBD	Facility decommissioning is scheduled for 2011.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Bechtel Hanford, Inc., Environmental Restoration	IMUSTs not associated with a building	216-BC-201, 216-BY-201, 216-TY-201, 241-B-361, 241-U-361, 241-T-361	Tank system heels in each IMUST	None	DOE assessment: 2 nd quarter CY 2006	Data gap plan: 2 nd quarter CY 2007 Starting negotiations: Ongoing as part of Central Plateau negotiations	The IMUSTs will be dispositioned with their respective cribs. Further information regarding the remediation strategy can be found in DOE/RL-98-28, Rev. 0, <i>200 Areas Remedial Investigation/ Feasibility Study Implementation Plan - Environmental Restoration Program</i> . The schedule for characterization and remediation of these tanks is part of the ongoing Central Plateau negotiations.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Com- pany, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Bechtel Hanford, Inc., Environmental Restoration	PUREX	202-A, 203-A, 204-A, 206-A, 211-A, 212-A, 213-A, 214-A/B/C/D, 215-A, 216-A, 225-EC, 271-AB, 276-A, 281-A, 291-A, 291-AB/AC/AD/AE/AG/AH/AJ/AK, 291-A-1, 292-AA/AB, 293-A, A93-AA, 294-A, 295-A, 295-AA/AB/A C/AD/AE, 296-A-1, 296-A-2, 296-A-3, 296-A-5A/5B, 296-A-6/7/8/9/10/14/ 24, 2711-A-1, 2712-A, 2714-A/U, 217-A, 252-AC/AB, 216-A-5 (IMUST)	S&M Plan, DOE/RL-98-35, identifies the hazardous material remaining in the facility. Tank heels relate to TSD tank system and 216-A-5.	S&M Plan, DOE/RL-98-35, identifies the hazardous material remaining in the facility.	DOE assessment: NA	Data gap plan: NA Starting negotiations: Complete. Any additional negotiations will be held in accordance with Section 8.6.2 of the Tri-Party Agreement Action Plan.	PUREX is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement. Final disposition of the IMUST at PUREX will be scheduled such that the activities are performed concurrently. See the location-specific data sheet for TSD waste storage at PUREX.
Bechtel Hanford, Inc., Environmental Restoration	REDOX	202-S, 291-S, 292-S, 293-S, 2718-S, 211-S, 2711-S, 2715-S, 2904-SA, 2710-S, 2706-S,	S&M Plan, DOE/RL-98-19, identifies the hazardous material remaining in the facility.	S&M Plan, DOE/RL-98-19, identifies the hazardous material remaining in the facility.	DOE assessment: NA	Data gap plan: NA Starting negotiations: Complete. Any additional negotiations will be held in accordance with section 8.6.2 of the Tri-Party Agreement Action Plan.	REDOX is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement.

Table C-2. Potential Mixed Waste.

A	B	C	D	E	F	G	H
Company, project	Common name or description	Facility number	Solid waste, with potential for mixed waste, not integral to the building or structure (no use)	Materials, with potential to become solid waste and subsequently mixed waste (in standby, possible use)	DOE assessment of storage methods	Schedule information	Integrating factors
Bechtel Hanford, Inc., Environmental Restoration	U Plant	221-U, 276-U, 211-UA, 291-U, 292-U, 241-WR-001, 241-WR-002, 241-WR-003, 241-WR-004, 241-WR-005, 241-WR-006, 241-WR-007, 241-WR-008, 241-WR-009, 2716-U, 2714-U	S&M Plan, DOE/RL-98-20, identifies the hazardous material remaining in the facility.	S&M Plan, DOE/RL-98-20, identifies the hazardous material remaining in the facility.	DOE assessment: NA	Data gap plan: NA Starting negotiations: Complete. Any additional negotiations will be held in accordance with section 8.6.2 of the Tri-Party Agreement Action Plan.	U Plant is identified in Chapter 8 of the Tri-Party Agreement, as one of the Hanford facilities under S&M. Discussions with the regulators are ongoing to perform CDI at U Plant. Final disposition of the WR vault and U Plant will be scheduled such that the activities are performed concurrently.
Bechtel Hanford, Inc., Environmental Restoration	UO3 Facility	224-U, 272-U, 2715-UA, 203-U, 203-UX, 211-U, 207-U, 270-W (IMUST)	S&M Plan, DOE/RL-98-22, identifies the hazardous material remaining in the facility.	S&M Plan, DOE/RL-98-22, identifies the hazardous material remaining in the facility.	DOE assessment: NA	Data gap plan: NA Starting negotiations: Complete. Any additional negotiations will be held in accordance with section 8.6.2 of the Tri-Party Agreement Action Plan.	UO ₃ is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement. 270-W will be characterized as part of the 200-PW-2 Operable Unit. Scheduled completion of the RI/FS process is December 2008 (Milestone M-15-00C)

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table.

Company/Project	Common Name or Description	Facility Number	Calendar Year Deleted	"Stuff"/Material Deleted	Reason for Deletion
Fluor Hanford Inc., Hanford Site Operations	Rad. Storage Area	3711	2001	Lead bricks	Shipped 9/26/01 to Duratek Inc. in Memphis, TN for decontamination/lead casting
Fluor Hanford Inc., Hanford Site Operations	Waste Storage Building	2724WB	2001	Radiators (from motor vehicles)	Shipped 9/26/01 to Duratek, Inc in Memphis, TN for decontamination/metal melt
Fluor Hanford Inc., Nuclear Material Stabilization Project	Plutonium Finishing Plant	234-5Z	2001	E1: Laboratory Reagents E2: Archive Laboratory Samples E3: PR cans that have lead liners. E4: Low-grade SNM solutions not run through the precipitation process, but with potential to become solid waste (e.g. the direct discard process).	E1: These chemicals are in use within the laboratory. E2: Samples are archived in accordance with sample exclusion. E3 and E4: Material is now included on location-specific data sheets.
Fluor Hanford Inc., Nuclear Material Stabilization Project	MW Treatment and Storage Tanks	241-Z	2001	Tank D-9, Treatment chemicals	Tank D9 is in use to mix treatment chemicals. Treatment chemicals are in use in transferring waste from the Plutonium Finishing Plant to Double Shell Tanks.
Fluor Hanford, Inc., Analytical Services	Waste Handling Facility	219-S	2001	Tank 103 and heel content	Combined with existing location-specific data sheet for the 219-S Tank System
Fluor Hanford, Inc., River Corridor Project	300-RRLWS	RRLWS	2001	Retired radioactive liquid waste sewer piping and ancillary structures might designate as MW.	Below-ground structure: Does not meet reporting criteria for Potential Mixed Waste Table.
Fluor Hanford, Inc., Waste Management Project	2706-T Conex Box	Conex box CC2W0136 and CC2W137	2001	Various decontamination equipment, spill pallets, shipping coolers, carts, hoses, storage cabinets, and sampling equipment.	These conex boxes were opened and the contents visually verified and photographs taken. The photographs clearly demonstrate that the equipment is readily accessible. The equipment will be used in the future as part of the 2706-T Complex operations (e.g., decontamination, sampling, etc.). The photographs are maintained in the T Plant Complex operating record.
Fluor Hanford, Inc., Waste Management Project	200 ETF	2025E	2001	Thin film dryer rotor	Rotor was rebuilt for reuse at the 200 ETF.
Fluor Hanford, Inc., Spent Nuclear Fuel	100 K Basins	105-KW	2001	Lead bricks, sheets	The lead has been declared CERCLA waste. A location-specific data sheet was created.
Bechtel Hanford, Inc., Environmental Restoration	100 C Reactor Facility	105-C, 118-C-4	2001	Reactor core, and equipment remaining in the facility.	Reactor core is part of the structure of the building. Mixed waste is removed during the reactor interim safe storage.

Company/Project	Common Name or Description	Facility Number	Calendar Year Deleted	"Stuff"/Material Deleted	Reason for Deletion
Bechtel Hanford, Inc., Environmental Restoration	100 D/DR Reactor Facility	105-D, 105-DR, 117-DR, 190-DR	2001	Reactor core, and equipment remaining in the facility.	Reactor core is part of the structure of the building. Mixed waste is removed during the reactor interim safe storage. Waste forecasts are included in the 5-year projections on the location-specific data sheets.
Bechtel Hanford, Inc., Environmental Restoration	100 F Reactor Facility	105-F	2001	Reactor core, and equipment remaining in the facility.	Reactor core is part of the structure of the building. Mixed waste is removed during the reactor interim safe storage. Waste forecasts are included in the 5-year projections on the location-specific data sheets.
Bechtel Hanford, Inc., Environmental Restoration	100 H Reactor Facility	105-H, 1720-HA, 1713-H	2001	Reactor core, and equipment remaining in the facility.	Reactor core is part of the structure of the building. Mixed waste is removed during the reactor interim safe storage. Waste forecasts are included in the 5-year projections on the location-specific data sheets.
Bechtel Hanford, Inc., Environmental Restoration	100-N Reactor Facilities	See Table 1, S&M Plan for the 100-N Deactivated Facilities, DOE/RL-98- -64, Rev. 0	2001	Some remaining hazardous materials consisting of activated materials and fission products contained within the reactor block. (Further details are provided in DOE/RL-98- 64, Rev. 0, S&M Plan for the 100-N Area Deactivated Facilities)	Reactor core is part of the structure of the building. Mixed waste was removed during the reactor decommissioning.
Bechtel Hanford, Inc., Environmental Restoration	REDOX	276-S-141/142	2001	Tanks and heel content	A treatability group was developed to account for the 276-S-141/142 tanks. (See Appendix B).
Bechtel Hanford, Inc., Environmental Restoration	Semi Works	241-CX-70, 241-CX-71, 241-CX-72, 276-C	2001	Tanks and heel content	A treatability group was developed to account for the 241-CX tanks. (See Appendix B).

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ACRONYMS

ATG	Allied Technology Group, Inc.
BAT	best available technology
BDAT	best demonstrated available technology
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CDD	critical design document
CFR	<i>Code of Federal Regulations</i>
CH	contact handled
CWC	Central Waste Complex
CY	calendar year
D&D	decontamination and decommissioning
DOE	U. S. Department of Energy
DOE-ORP	U.S. Department of Energy, Office of River Protection
DOE-RL	U.S. Department of Energy, Richland Operations Office
DST	double-shell tank
DU	depleted uranium
EA	environmental assessment
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
EPA	U. S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
ETF	200 Area Effluent Treatment Facility
F&R	functions and requirements
FDC	functional design criteria
FFCA	<i>Federal Facilities Compliance Act of 1992</i>
FY	fiscal year
GASVIT	gasification-vitrification
HL	high level
HLW	high-level waste
HWTU	325 Hazardous Waste Treatment Unit
IHLW	immobilized high-level waste
ILAW	immobilized low-activity waste
INEEL	Idaho National Engineering and Environmental Laboratory
LDR	land disposal restrictions
LERF	Liquid Effluent Retention Facility
LLMW	low-level mixed waste (same as MLLW)
LLW	low-level waste

ACRONYMS (cont)

MLLW	mixed low-level waste
MW	mixed waste
NA	not applicable
NDA	nondestructive assay
NDE	nondestructive examination
NPL	National Priorities List
O/C	organic/carbonaceous
OU	operable unit
PCB	polychlorinated biphenyl
PEIS	programmatic environmental impact statement
PFP	Plutonium Finishing Plant
pH	negative logarithm of the hydrogen-ion concentration
PMP	project management plan
PNNL	Pacific Northwest National Laboratory
PSTF	Purgewater Storage and Treatment Facility
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
REC	radiochemical engineering cell
RH	remote handled
RI/FS	remedial investigation/feasibility study
ROD	record of decision
RPP	River Protection Project
S&M	surveillance and maintenance
SALDS	State-Approved Land Disposal Site
SCW	special-case waste
SST	single-shell tank
SWIFT	Solid Waste Integrated Forecast Technical (Report)
TBD	to be determined
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
TRU	transuranic (waste)
TRUM	transuranic mixed (waste)
TSD	treatment, storage, and/or disposal
TWRS	Tank Waste Remediation System
UHC	underlying hazardous constituent
UV	ultraviolet
WAC	<i>Washington Administrative Code</i>
WESF	Waste Encapsulation and Storage Facility
WIPP	Waste Isolation Pilot Plant
WMA	Waste Management Area
WRAP	Waste Receiving and Processing Facility
WTP	Waste Treatment Plant

METRIC CONVERSION CHART

Into metric units

Out of metric units

If you know	Multiply by	To get	If you know	Multiply by	To get
Length			Length		
inches	25.40	millimeters	millimeters	0.03937	inches
inches	2.54	centimeters	centimeters	0.393701	inches
feet	0.3048	meters	meters	3.28084	feet
yards	0.9144	meters	meters	1.0936	yards
miles (statute)	1.60934	kilometers	kilometers	0.62137	miles (statute)
Area			Area		
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.09290304	square meters	square meters	10.7639	square feet
square yards	0.8361274	square meters	square meters	1.19599	square yards
square miles	2.59	square kilometers	square kilometers	0.386102	square miles
acres	0.404687	hectares	hectares	2.47104	acres
Mass (weight)			Mass (weight)		
ounces (avoir)	28.34952	grams	grams	0.035274	ounces (avoir)
pounds	0.45359237	kilograms	kilograms	2.204623	pounds (avoir)
tons (short)	0.9071847	tons (metric)	tons (metric)	1.1023	tons (short)
Volume			Volume		
ounces (U.S., liquid)	29.57353	milliliters	milliliters	0.033814	ounces (U.S., liquid)
quarts (U.S., liquid)	0.9463529	liters	liters	1.0567	quarts (U.S., liquid)
gallons (U.S., liquid)	3.7854	liters	liters	0.26417	gallons (U.S., liquid)
cubic feet	0.02831685	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.7645549	cubic meters	cubic meters	1.308	cubic yards
Temperature			Temperature		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
Energy			Energy		
kilowatt hour	3,412	British thermal unit	British thermal unit	0.000293	kilowatt hour
kilowatt	0.94782	British thermal unit per second	British thermal unit per second	1.055	kilowatt
Force/Pressure			Force/Pressure		
pounds (force) per square inch	6.894757	kilopascals	kilopascals	0.14504	pounds per square inch

06/2001

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Third Ed., 1990, Professional Publications, Inc., Belmont, California.

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**CALENDAR YEAR 2001 HANFORD SITE MIXED WASTE LAND
DISPOSAL RESTRICTIONS STORAGE REPORT
VOLUME 2, CHARACTERIZATION AND TREATMENT PLAN**

1.0 INTRODUCTION

This second volume of the Hanford Site LDR report discusses characterization, treatment and disposal actions, and plans for managing the mixed waste on the Hanford Site. Waste characterization and treatment activities on the Hanford Site continue to increase as waste management facilities are completed and funded to process and/or treat the waste. This chapter briefly describes the development process for the treatment plan and identifies other reports that can be consulted for additional information concerning the Hanford Site and expected waste treatment activities. This report has been organized to be similar to most of the site treatment plans prepared by other U.S. Department of Energy (DOE) sites under the *Federal Facility Compliance Act (FFCA) of 1992* requirements.

1.1 SITE TREATMENT PLAN ACTIVITIES

The overall information needs and relationships for the report are shown in Figure 1-1. Initial activities include identifying waste streams and available and needed characterization data associated with those streams, and defining the regulatory treatment requirements. The treatment requirements define the treatment categories and technologies needed for each waste type. The physical, chemical, and radiological characteristics of the waste determine the treatability group in which the waste is included. Hanford Site treatment, storage, and/or disposal (TSD) units and available commercial processes for treating the mixed waste also are identified along with their capabilities. Knowing the processes for the treatment capabilities and the treatment requirements for each treatability group, each treatability group can be assigned to either existing treatment capacity or to future processes. For the existing processes, Hanford Site schedules can be determined based on anticipated budgets and overall onsite needs. These schedules confirm the need for operations funding. For the future processes, the waste that requires further characterization determines the types of technology needs and, subsequently, the requirements and capabilities. The future processes can be scheduled and operated as budgets allow.

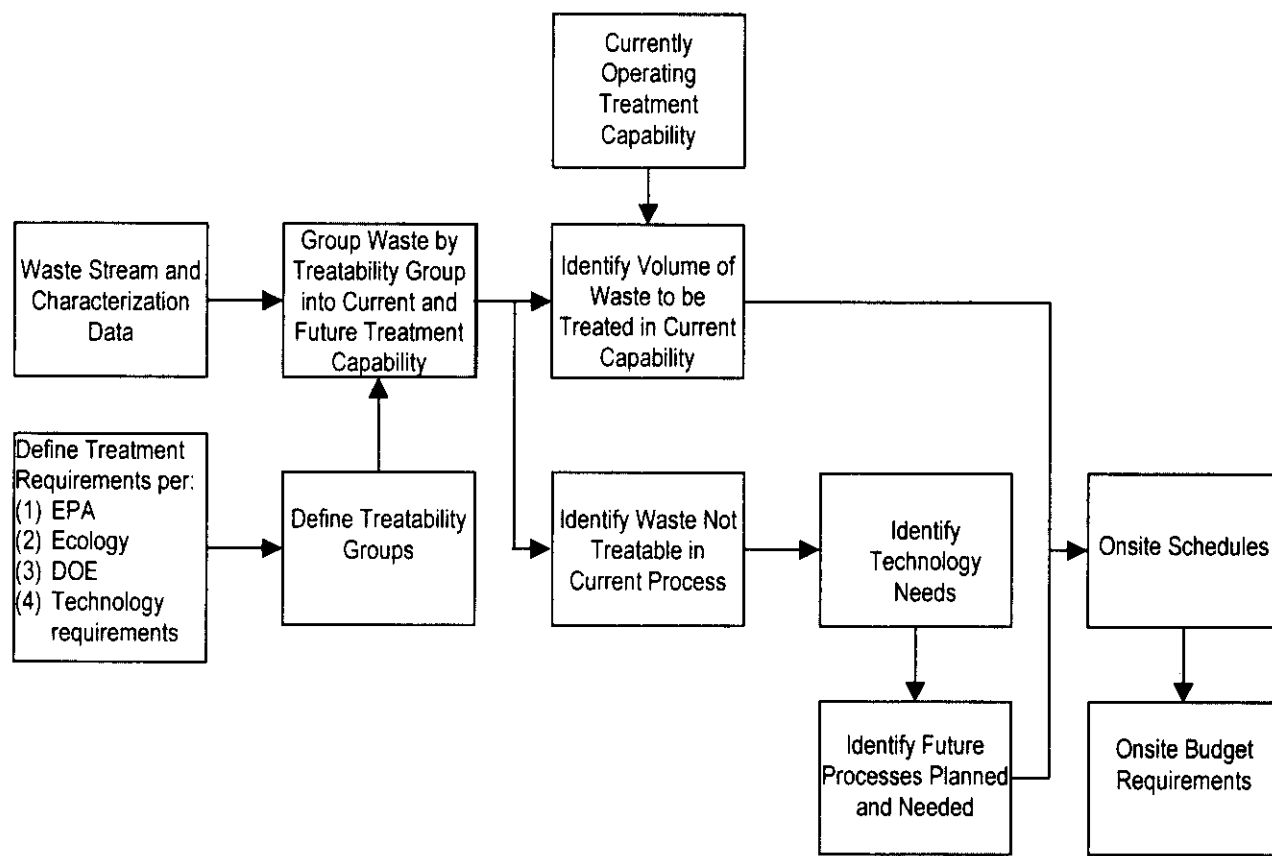


Figure 1-1. Outline of Activities to Complete Treatment Plan.

1.2 RELATIONSHIP TO OTHER MAJOR DOE AND HANFORD SITE ACTIVITIES AND DOCUMENTS

The characterization and treatment plan is influenced by numerous Hanford Site activities. Some of the activities and their resulting reports are identified in the following reports. Additional details can be obtained from the referenced reports. Some of the reports provide additional information on waste stream characterization and evaluation of alternatives, and identify the likely effects of managing the mixed waste on the Hanford Site. These reports include the following:

- ***Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)*** (Ecology et al. 2001). This report (Volume 1 and Volume 2) fulfills Tri-Party Agreement Milestone M-26-01L. The Tri-Party Agreement also contains many treatment characterization milestones.
- ***Final Environmental Impact Statement for the Tank Waste Remediation System*** (DOE/EIS-0189). This environmental impact statement (EIS) and its associated record of decision (ROD) provide details on the alternative treatments for HLW.
- ***Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Wastes*** (DOE/EIS-0200-F). This EIS and its associated RODs provide the overall evaluation of treatment and disposal alternatives for all the DOE sites.

- **Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement** is being prepared. A draft is expected to be issued in 2002.
- **Solid Waste Integrated Forecast Technical Report (SWIFT)**. This program provides the waste generation volume forecast.
- ***Project Management Plan for Low-Level Mixed Waste and Greater-Than-Category-3 Waste per Tri-Party Agreement Milestone M-91-10*** (HNF-4293-1). This document addresses treatment of oversized boxed, Greater-than-Category-3, and remote-handled (RH) waste.
- ***M-91-03 Transuranic Waste Project Management Plan*** (Letter, C. E. Clark to M. A. Wilson, May 22, 2001, Transmittal of M-091-03 Project Management Plan (PMP) and Associated Change Request for Transuranic/Transuranic Mixed (TRU/TRUM) Waste, 01-RCA-300). This document addresses processing of RH and large-container contact-handled (CH) transuranic (TRU) waste.
- ***Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*** (DOE/EIS-0222-F). This EIS and its associated RODs identify areas on the Hanford Site used for managing and disposing of mixed waste.

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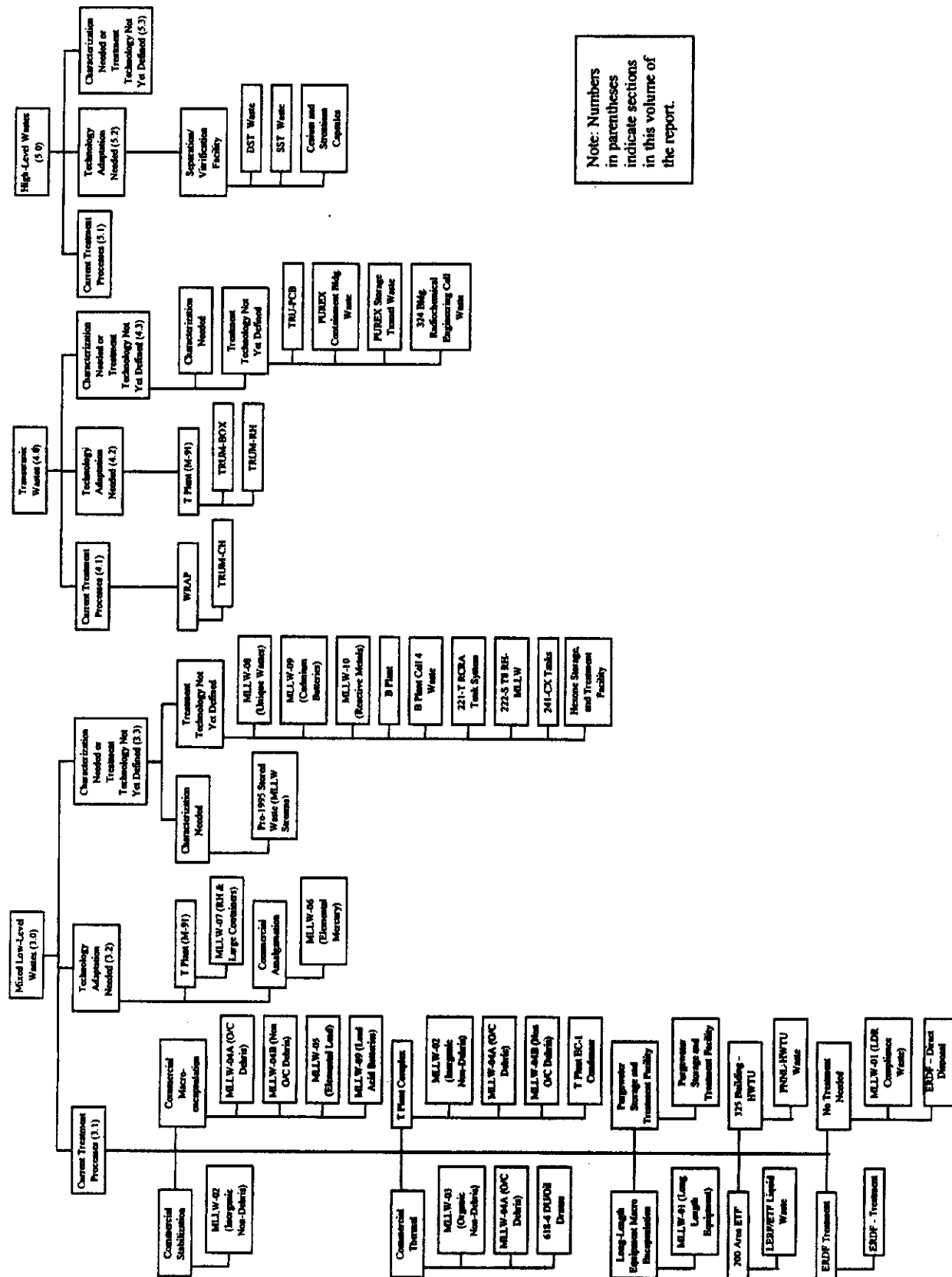
2.0 WASTE STREAMS AND TREATABILITY GROUPS

Each waste treatability group is or will be assigned to a specific treatment process. These assignments are based on the treatment and/or characterization requirements of the treatability group and the treatment process capability. Figure 2-1 summarizes the layout of the treatability groups and identifies where each group is expected to be treated. The upper levels of the chart show the waste type [e.g., mixed low-level waste (MLLW)] and whether or not the treatment capacity exists. The information is presented first for existing processes, then for planned processes, and finally for treatability groups for which further characterization is required to determine the treatment process or for which a treatment technology has not been selected.

Figure 2-1 also indicates the characterization needs for the waste. Waste to be treated under existing processes typically is characterized sufficiently to designate the waste and ensure that the waste is categorized correctly and safely stored. Any further characterization of this waste that must be done is planned as part of the treatment preparation. Waste to be treated under planned processes and processes not yet defined is characterized sufficiently to know the designation and appropriate treatment category. Because treatment is not planned for waste requiring processes not yet defined, additional characterization might occur as part of the design and development of the proposed treatment units.

The schedule and means for reporting waste characterization data are outlined in Section 9.6 of the Tri-Party Agreement (Ecology et al. 2001). This section states that DOE will make available to Ecology and the EPA all relevant electronic data and databases. All validated data are entered into the selected database in accordance with the data delivery schedule in Tri-Party Agreement Section 9.6.6.

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Note: Numbers in parentheses indicate sections in this volume of the report.

Figure 2-1. Correlation Between Treatability Groups and Treatment Facilities.

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3.0 MIXED LOW-LEVEL WASTE STREAMS

Disposition maps shown in Figures 3-1 and 3-2 present an overview of the planned treatment and disposal of MLLW streams. Figure 3-1 shows the major waste treatability groups and the associated treatment processes (Section 3.1) with existing capabilities. Figure 3-2 shows a flowsheet for the treatability groups contained in the adaptation-needed category (Section 3.2). Because the treatment plan for the remaining MLLW treatability groups is not well developed, a flowsheet for these groups is not included. As noted in Figure 3-1, some treatability groups (MLLW-01, -02, -04A, and -04B) could be treated in more than one location. These treatability groups also are shown in multiple locations in Figure 2-1.

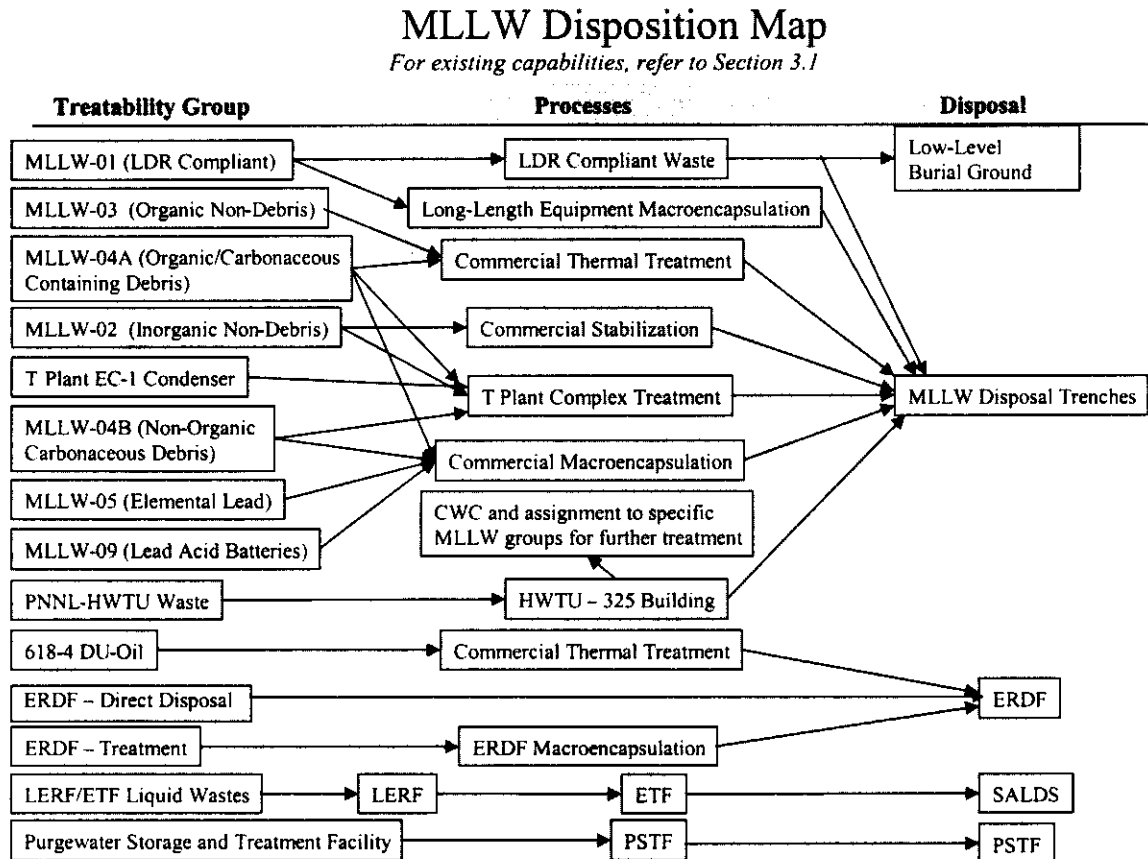


Figure 3-1. Site Disposition Map for Mixed Low-Level Waste.

MLLW Disposition Map

For future capabilities, refer to Section 3.2

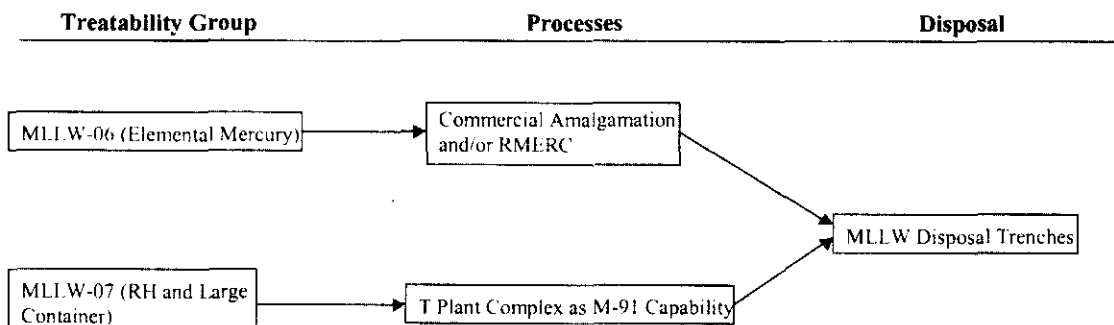


Figure 3-2. Disposition Map for Treatability Groups Needing Facilities Adapted to Allow Waste Treatment.

3.1 MIXED WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY EXISTS

This section generally describes each treatment process and provides information concerning the processes identified in Figure 3-1. This section also provides information on which waste treatability groups will be treated by each process, including the volume of waste treated during the past year and the anticipated volume of waste to be treated in CYs 2002 through 2006.

In reviewing the tables in this section for each treatment process, it becomes apparent that, in many of the tables, the projected volume of MLLW to be treated is related directly to active TPA milestone M-91 negotiations. Examples of the waste streams for which M-91 might be negotiated to apply are the following: MLLW-01, MLLW-02, MLLW-03, MLLW-04A, MLLW-04B, MLLW-05, MLLW-06, MLLW-07, MLLW-08, MLLW-09, MLLW-10, PNNL-HWTU Waste, and the T Plant EC-1 Condenser.

The planning baseline indicates that sufficient capacity exists to treat this volume of MLLW using the identified treatment process and alternatives: commercial stabilization, commercial thermal treatment, T Plant Complex, Broad Spectrum contracts, etc. However, the exact distribution of treatment among these treatment processes has not been finalized. This allows the Hanford Site to optimize the use of funds (minimize unit costs), to react to changing conditions and capabilities of the treatment processes, and to use emerging national treatment contracts.

Through the use of Broad Spectrum contracts, DOE waste generators have the opportunity to participate in this nationwide privatization initiative for treating and disposing of legacy and currently generated MLLW. The Broad Spectrum contracts have been awarded to Materials and Energy Corporation (Perma-Fix), Waste Control Specialists, and ATG. While at this writing, ATG is in bankruptcy and the Hanford Site is not shipping waste currently to ATG for processing, the outcome of the bankruptcy proceedings might impact the capability used to support Hanford Site waste processing in the future. These Broad Spectrum contracts give the Hanford Site several options with unique capabilities for treating a wide range of MLLW streams.

3.1.1 Commercial Stabilization

MLLW that does not have a significant organic content and is not debris waste is expected to be stabilized. Waste currently in storage has been characterized sufficiently for proper designation and storage on the Hanford Site. Additional characterization likely will be needed for much of this waste before treatment. This stabilization processing will be conducted in commercial facilities under contract to DOE.

Stabilization is a treatment technology for non-debris waste that contains heavy metals or other specific hazardous components. Most non-debris waste will be solid, but stabilization could be used to neutralize and solidify some liquid waste. The objective of stabilization is to immobilize the hazardous component through fixation into low-solubility materials, and by encapsulation to reduce the potential for future releases. Usually, stabilization is accomplished by mixing the waste with Portland cement or pozzolanic materials at a preselected ratio, but stabilization also can include mixing with polymer materials. This treatment prepares the waste to meet the disposal requirements. Existing commercial treatment contracts do not cover all the waste types nor all forecast volumes, so additional contracts are expected to be placed with commercial treatment contractors. Table 3-1 contains information on the commercial stabilization process, using ATG as a representative example for regulatory status information.

Table 3-1. Commercial Stabilization Process Summary.

Type of information	Information
Treatability group that the process is expected to treat	MLLW-02, Inorganic Non-Debris.
Tri-Party Agreement milestones related to this treatability group	Proposed as part of active M-91 TPA negotiations.
Volume of Hanford Site mixed waste treated during CY 2001	51 m ³ treated but not yet disposed of.
Projected volume of MLLW to be treated between CY 2002 and the end of CY 2006	Treatment will be performed as necessary to support the results of active M-91 TPA negotiations and will include working off the backlog CWC inventory.
Treatment capacity	Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial stabilization, thermal treatment, T Plant Complex, Broad Spectrum contracts, etc.)
ATG regulatory status information:	
- Date of RCRA permit	1999
- Date treatment contract established	1995
- Date facility construction started	1999
- Date system testing started	1999
- Date operations begin	1999
- Current regulatory status	Permitted, some operations temporarily suspended.
Budget status for continued operations	Funding has been requested in the FY 2002 through FY 2003 budgets and currently is planned to be requested through the FY 2008 budgets to allow treatment to be performed as necessary to support the results of active M-91 TPA negotiations.

Table 3-1. Commercial Stabilization Process Summary.

Type of information	Information
Planned completion of treatment using this process	The baseline plan anticipates that the majority of this treatability group will be processed using commercial facilities. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future.
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	The T Plant Complex and the 325 HWTU also have stabilization capability and could be used to supplement commercial capacity.

ATG	Allied Technology Group, Inc.
CY	calendar year
FY	fiscal year
HWTU	325 Hazardous Waste Treatment Unit
MLLW	mixed low-level waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
Tri-Party Agreement (TPA)	<i>Hanford Federal Facility Agreement and Consent Order</i>

3.1.2 Commercial Macroencapsulation

Macroencapsulation consists of applying a surface coating of polymeric organics or using a jacket of inert inorganic materials (e.g., cement) to substantially reduce surface exposure to potential leaching media. During CY 2001, waste was treated under commercial contracts near the Hanford Site. Existing contracts do not cover all the waste streams, so it is expected that some waste will be treated on the Hanford Site, or that additional commercial contracts will be awarded competitively as needed to meet future needs. The processes potentially available near the Hanford Site are described in the EA for non-thermal treatment. For macroencapsulation of debris, pretreatment processes can include sorting, cutting/shearing, compaction, and supercompaction. Decontaminated lead can be recycled or reused. Other lead waste is encapsulated by polymer extrusion. Table 3-2 contains information concerning the commercial macroencapsulation process, using ATG as a representative example for regulatory status information.

Other immobilization treatment technologies could be used to treat some of the Hanford Site MLLW debris.

Table 3-2. Commercial Macroencapsulation Process Summary.

Type of information	Information
Treatability groups that the process is expected to treat	MLLW-04A, Organic/Carbonaceous (O/C) Hazardous Debris; MLLW-04B, Non-O/C Hazardous Debris; MLLW-05, Elemental Lead; and MLLW-09, Lead-Acid and Cadmium Batteries.
Tri-Party Agreement milestones related to these treatability groups	Proposed as part of active M-91 TPA negotiations.
Volume of Hanford Site mixed waste treated during CY 2001	440 m ³ .
Projected volume of MLLW to be treated between CY 2002 and the end of CY 2006	Treatment will be performed as necessary to support the results of active M-91 TPA negotiations and will include working off the backlog CWC inventory.
Treatment capacity	Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial stabilization, commercial thermal treatment, T Plant Complex, Broad Spectrum contracts, etc.).
ATG regulatory status information:	
- Date of RCRA permit application	1999
- Date treatment contract established	1995
- Date facility construction started	1999
- Date system testing started	1999
- Date operations begin	1999
- Current regulatory status	Permitted, some operations temporarily suspended.
Budget status for continued operations	Funding has been requested in the FY 2002 through FY 2003 budgets and currently is planned to be requested through the FY 2008 budgets to allow treatment to be performed as necessary to support the results of active M-91 TPA negotiations.
Planned completion of treatment using this facility	The baseline plan anticipates that the majority of these treatability groups will be processed using commercial treatment. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of the Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future.
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	The T Plant Complex and the 325 HTWU also have macroencapsulation capability and could be used to supplement commercial facilities. Other commercial facilities also could be used in the future.

ATG

Allied Technology Group, Inc.

CY

calendar year

FY

fiscal year

HTWU

325 Hazardous Waste Treatment Unit

MLLW

mixed low-level waste

RCRA

Resource Conservation and Recovery Act of 1976

Tri-Party Agreement

Hanford Federal Facility Agreement and Consent Order

3.1.3 Thermal Treatment of Organics

Macroencapsulation is currently being used to treat hazardous debris containing organic/carbonaceous (O/C) constituents that might otherwise be treated thermally. The Hanford Site has been allowed to treat, and plans to continue to treat, the O/C debris using macroencapsulation in accordance with a sitewide 1,000-mile inapplicability certification for the Washington State O/C LDRs.

MLLW containing organic materials will be treated thermally when sufficient capability has been demonstrated for the Hanford Site waste. The material could be debris waste, other solid waste, or liquid waste. Waste currently in storage has been characterized sufficiently for proper designation and storage on the Hanford Site. Additional characterization likely will be needed for much of this waste before treatment.

The thermal treatment process destroys organic materials by oxidation, combustion, and/or pyrolysis. During CY 2001, 11 m³ of the waste in this treatability group was treated at ATG. For this report, future thermal treatment will be assumed to be in a commercial system. Additional commercial processing contracts will be awarded competitively as needed to meet future needs. The thermal treatment system installed at ATG used the gasification-vitrification (GASVITTM) treatment process. Gasification removes the organic materials and vitrification converts the residual solids into a stable leach-resistant glass-like material suitable for disposal. The process and its potential environmental impacts are described in the EA for ATG operations. Pretreatment processes for the GASVITTM system include sorting and size reduction. The pretreatment process for liquids can include liquid consolidation, liquid treatments (e.g., neutralization), filtration, and ultraviolet (UV) oxidation. The GASVITTM process includes the necessary offgas cleanup systems that can produce small amounts of secondary waste. Table 3-3 contains information concerning commercial thermal treatment, using ATG as a representative example for regulatory status information.

Table 3-3. Commercial Thermal Treatment Process Summary.

Type of information	Information
Treatability groups the process is expected to treat	MLLW-03, Organic Non-Debris, and MLLW-04A, O/C Hazardous Debris.
Tri-Party Agreement milestones related to this treatability group	M-91-12A, Complete thermal treatment and disposal of 240 m ³ of waste by 12/31/2002. M-91-12, Complete thermal treatment and disposal of an additional 360 m ³ of waste by 12/31/2005. Additional milestone proposed as part of active M-91 TPA negotiations.
Volume of Hanford Site mixed waste treated during CY 2001	11 m ³ .
Projected volume of MLLW to be treated between CY 2002 and the end of CY 2006	Treatment will be performed as necessary to support the results of active M-91 TPA negotiations and will include working off the backlog CWC inventory. At least 600 m ³ will be thermal treatment (M-91-12).
Treatment capacity	Sufficient capacity exists to thermally treat 600 m ³ of MLLW using the identified treatment processes and alternatives by 12/31/2005.
ATG regulatory status information:	
- Date of RCRA permit application	1999
- Date treatment contract established	1995
- Date facility construction started	1999

Table 3-3. Commercial Thermal Treatment Process Summary.

Type of information	Information
- Date system testing started	2000
- Date operations began	2001
- Current regulatory status	Permitted, thermal treatment operations temporarily suspended.
Budget status for continued operations	Funding has been requested in the FY 2003 budget and currently is planned to be requested through the FY 2008 budgets to allow treatment to be performed as necessary to support the results of active M-91 TPA negotiations. ATG is not expected to process any more thermal waste in FY 2002.
Planned completion of treatment using this facility	The baseline plan anticipates that the majority of this treatability group will be processed with commercial contracts because other DOE thermal treatment capability is lacking. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future.
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	Other treatment technologies will be available for treating this waste stream, although the technologies are not as far along as the ATG GASVIT™ process. Examples include molten salt oxidation and direct chemical oxidation under a Broad Spectrum contract.

ATG	Allied Technology Group, Inc.
CY	calendar year
FY	fiscal year
GASVIT	gasification-vitrification
MLLW	mixed low-level waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>

3.1.4 Commercial Thermal Treatment of 618-4 DU/Oil Drums Waste

The preferred treatment alternative for the 618-4 DU/Oil Drums waste is to have the waste thermally treated at ATG in Richland; however, other treatment technologies are being considered. The 618-4 DU/Oil Drums treatability group consists of waste from uranium machining. Uranium fines and chips can be pyrophoric and were immersed in oil in drums and disposed in the 618-4 Burial Ground. Table 3-4 provides information with respect to the treatment of this waste stream, using ATG as a representative example for regulatory status information.

Table 3-4. Commercial Comprehensive Environmental Response, Compensation, and Liability Act Thermal Treatment Summary.

Type of information	Information
Treatability group that the process is expected to treat	618-4 DU/Oil Drums.
Tri-Party Agreement milestones related to this treatability group	M-16-03I.

Table 3-4. Commercial Comprehensive Environmental Response, Compensation, and Liability Act
Thermal Treatment Summary.

Type of information	Information
Volume of Hanford Site mixed waste treated during CY 2001	0
Projected volume of MLLW to be treated by end of CY 2006	220 m ³ .
Treatment capacity	TBD
ATG regulatory status information:	
- Date of RCRA permit application	1999
- Date treatment contract established	1995
- Date facility construction started	1999
- Date system testing started	2000
- Date operations begin	2001
- Current regulatory status	Permitted, thermal treatment operations temporarily suspended.
Budget status for continued operations	Treatment and disposal of the 618-4 drums are budgeted and scheduled to be performed in FY 2002-2003 in accordance with the Richland Environmental Restoration Project FY 2001-2003 Detailed Work Plan.
Planned completion of treatment using this facility	The baseline plan anticipates that this treatability group will be processed using ATG. Treatment of the 618-4 waste stream is expected to be performed during FY 2002-2003.
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	Other treatment technologies have been assessed for this waste stream including in situ vitrification.

ATG	Allied Technology Group, Inc.
FY	fiscal year
MLLW	mixed low-level waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order.</i>

3.1.5 T Plant Complex

The commercial stabilization and macroencapsulation treatment could be supplemented or replaced by capability that exists within the T Plant Complex. While the T Plant Complex canyon is being planned for use in treating RH waste (Section 3.2.1), the T Plant Complex canyon also has been used to open, inspect, segregate, and repackage mixed waste. The 2706-T Building within the T Plant Complex is a decontamination area with the capability to open, sample, sort, treat, and repackage boxes and drums of CH mixed waste. Some of the waste planned to go to commercial treatment facilities will be inspected in the 2706-T Building before being shipped offsite for treatment and some waste will be inspected following treatment. Table 3-5 contains information on the T Plant Complex.

Table 3-5. T Plant Complex Treatment Activities Summary.

Type of information	Information
Treatability groups that the process is expected to treat	MLLW-02, Inorganic Non-Debris, and MLLW-04B, Non-O/C Hazardous Debris and T Plant EC-1 Condenser.
Tri-Party Agreement milestones related to these treatability groups	Proposed as part of active M-91 TPA negotiations.
Volume of Hanford Site mixed waste treated during CY 2001	0
Projected volume of MLLW to be treated between CY 2002 and the end of CY 2006	Treatment will be performed as necessary to support the results of active M-91 TPA negotiations and will include working off the backlog CWC inventory.
Treatment capacity	Permitted capacity is 150 metric tons per day.
Regulatory status information:	
- Date of RCRA permit application	To be submitted in 2002
- Date treatment contract established	NA
- Date facility construction started	1944
- Date system testing started	NA
- Date operations begin	Mixed waste operations under interim status, Part A, Form 3, permit application, began 8/19/87.
- Current regulatory status	Operating under interim status to a current Part A Permit Application.
Budget status for continued operations	Funding has been requested in the FY 2002 through FY 2003 budgets and currently is planned to be requested through the FY 2008 budgets to allow treatment to be performed as necessary to support the results of active M-91 TPA negotiations.
Planned completion of treatment using this facility	The baseline plan anticipates that the majority of this treatability group will be processed using commercial treatment; however, significant treatment activities have occurred and could occur at T Plant Complex. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of the Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future.
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	The primary treatment processes are expected to be the commercial treatment facilities described in Sections 3.1.1 and 3.1.2. The EC-1 condenser is expected to be macroencapsulated or microencapsulated. Recycle of the condenser is also being considered. The 325 HTWU has some permitted capability to perform several treatment processes that could supplement the treatment planned for T Plant Complex.

FY

fiscal year

HTWU

325 Hazardous Waste Treatment Unit

MLLW

mixed low-level waste

RCRA

Resource Conservation and Recovery Act of 1976

Tri-Party Agreement (TPA)

Hanford Federal Facility Agreement and Consent Order

3.1.6 Long-Length Contaminated Equipment Macroencapsulation

Long-length contaminated equipment consists of equipment more than 12 feet long that is removed from underground waste tanks. The equipment is installed and removed through risers that connect the ground surface with the tank. Examples of such equipment are mixer pumps, transfer pumps, air lances, and monitoring equipment. The equipment could contain some residual waste and requires remote handling.

Macroencapsulation currently is planned as the treatment option for this equipment; the technique has been demonstrated in several different configurations. The River Protection Project (RPP) includes this planned treatment in its baseline plan. Details on the process can be found in *Long-Length Contaminated Equipment Disposal Process Path* (HNF-SD-WM-730). The basic process involves pulling the debris into a flexible receiver bag, filling the void with grout, and sealing the waste inside a burial container. The processing is done on the basis of 'treatment by generator', with the generating unit performing the debris macroencapsulation of the long-length equipment as the equipment is removed from the tanks. The macroencapsulated waste is transferred directly for disposal in the Hanford Site LLBG. Transfer is by a shielded transport trailer. Table 3-6 provides information on the long-length contaminated equipment macroencapsulation activities.

Table 3-6. Long-Length Contaminated Equipment Macroencapsulation Summary.

Type of information	Information
Treatability groups that the process is expected to treat	MLLW-01, LDR Compliant Waste.
Tri-Party Agreement milestones related to this treatability group	No direct milestone but included in M-91-10, Project Management Plan. Volumes would count toward milestone proposed as part of active M-91 TPA negotiations.
Volume of Hanford Site mixed waste treated during CY 2001	Approx. 2 m ³ .
Projected volume of MLLW to be treated by the end of CY 2006	65 m ³ .
Treatment capacity	Treatment will not be limited by treatment capacity.
Regulatory status information:	
- Date of RCRA permit application	No permit required. Treatment will be done under treatment by generator provisions.
- Date treatment contract established	No contract is needed.
- Date facility construction started	NA
- Date system testing started	NA
- Date for commencement of operations	NA
- Current regulatory status	NA
Budget status for continued operations	Funding is available for continued operations.
Planned completion of treatment using this facility	On completion of retrieval of mixed waste from SST and DST Systems.

Table 3-6. Long-Length Contaminated Equipment Macroencapsulation Summary.

Type of information	Information
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	The primary alternative to this treatment by generator is T Plant Complex.
CY	calendar year
DST	double-shell tank
MLLW	mixed low-level waste
MW	mixed waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RPP	River Protection Project
SST	single-shell tank
Tri-Party Agreement (TPA)	<i>Hanford Federal Facility Agreement and Consent Order.</i>

3.1.7 Environmental Restoration Disposal Facility Treatment

Approximately 0.2 percent of the environmental restoration waste is anticipated to be mixed waste that needs to be treated before disposal in ERDF. This is based on 2 percent of the ERDF waste being mixed waste and one-tenth of the mixed waste requiring treatment. This chromium- and lead-contaminated waste is treated by grouting or macroencapsulating within the disposal trenches. Specific information on the ERDF treatment activities is included in Table 3-7.

Table 3-7. Environmental Restoration Disposal Facility Treatment Activities Summary.

Type of information	Information
Treatability groups that the process is expected to treat	ERDF - Treatment.
Tri-Party Agreement milestones related to this treatability group	Treated as generated in compliance with regulatory timeframe. No compliance agreement required.
Volume of Hanford Site mixed waste treated during CY 2001	480 m ³ .
Projected volume of MLLW to be treated during CY 2002 through CY 2006	2,000 m ³ (estimated based on historical information, 0.2% of ERDF waste).
Treatment capacity	NA
Regulatory status information:	
- Date of RCRA permit application	NA
- Date facility construction started	NA
- Date operations begin	1996
- Current regulatory status	Facility is operating under a CERCLA ROD issued in 1995, amended in 1997 and 1999.
Budget status for continued operations	Funding is included as part of the Richland Environmental Restoration Project.
Planned completion of treatment using this facility	2046

Table 3-7. Environmental Restoration Disposal Facility Treatment Activities Summary.

Type of information	Information
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility.	Commercial macroencapsulation could be used for some waste at significantly increased costs.
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CY	calendar year
ERDF	Environmental Restoration Disposal Facility
FY	fiscal year
MLLW	mixed low-level waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
ROD	record of decision
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order.</i>

3.1.8 200 Area Effluent Treatment Facility and Liquid Effluent Retention Facility

Numerous Hanford Site activities generate low-level aqueous waste. Radioactive effluents are generated primarily in the 200 Areas. The Liquid Effluent Retention Facility (LERF) consists of three RCRA-compliant surface impoundments for storing low-level aqueous waste. The LERF provides segregation of RCRA- and CERCLA-regulated feed and equalization of the flow and pH of the feed to the 200 Area Effluent Treatment Facility (ETF). Each LERF basin has a capacity of 30 million L (7.8 million gal). A truck unloading station allows receipt of liquid effluents from other projects for transfer either to the LERF for storage or directly to the ETF for treatment.

Liquid effluents stored in LERF are treated in ETF to remove toxic metals, radionuclides, and ammonia, and to destroy organics. The ETF treatment process constitutes best available technology (BAT) treatment and includes pH adjustment, filtration, ultraviolet light/peroxide destruction of organics, reverse osmosis, degasification, and ion exchange. Storage tanks allow for hold-up of the treated effluent to verify that the waste has been treated to concentration levels in the permit before discharge. The treated effluent is discharged under a WAC 173-216 State Waste Discharge Permit to a state-approved land disposal site (SALDS) north of the 200 West Area after being delisted (40 CFR 261, Appendix IX, Table 2). Table 3-8 contains information on ETF.

The purgewater agreement signed by DOE, Ecology, and the EPA is being renegotiated. Currently, aqueous waste from wells is received at the Purgewater Storage and Treatment Facility (PSTF) and is treated via solar evaporation. The aqueous waste is from sampling, well maintenance, and well drilling. Under the revised agreement, this waste could be sent to ETF for treatment and disposal. For this report, the 2002 to 2006 purgewater forecast is maintained in the PSTF treatability group. The forecast might be revised to reflect the transfer to the ETF treatability group depending on the outcome of renegotiations.

Table 3-8. 200 Area Effluent Treatment Facility Summary.

Type of information	Information
Treatability Groups that the process is expected to treat	LERF/ETF Liquid Waste.
Tri-Party Agreement milestones related to this treatability group	M-26-05H, 8/31/2001; completed 7/2001 M-26-05J, 8/31/2003; M-26-05L, 8/31/2005; Prepare biennial tritium treatment technology report.
Volume of Hanford Site mixed waste treated during CY 2001	110,000 m ³ (28 million gal)

Table 3-8. 200 Area Effluent Treatment Facility Summary.

Type of information	Information
Projected volume of MLLW to be treated by end of CY 2006	ETF will process up to 430,000 m ³ (110 million gal) of effluent from various generating units. The exact volume of effluent processed depends on the actual volumes transferred to the LERF/ETF.
Treatment capacity	210,000 m ³ /yr.
Regulatory status information:	
- Date of RCRA permit	1997 (final status)
- Date facility construction started	1992
- Date system testing started	1994
- Date operations begin	1995
- Current regulatory status	Operating under a final status RCRA permit (except for groundwater monitoring).
Budget status for continued operations	Funded for minimum safe operations.
Planned completion of treatment using this facility	2032
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility	None.

Note: to convert gallons to cubic meters, multiply by 0.0037845.

CY	calendar year
ETF	200 Area Effluent Treatment Facility
LERF	Liquid Effluent Retention Facility
MLLW	mixed low-level waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>

3.1.9 325 Hazardous Waste Treatment Unit

The 325 HWTU is a RCRA permitted TSD unit used to perform tank- and bench-scale treatment of mixed waste and to investigate other treatment technologies. The 325 HWTU is located in the 325 Building in the 300 Area and is intended to treat small volumes of mixed waste to meet CWC waste acceptance criteria for storage. Waste that is not LDR compliant for disposal is sent to CWC to await further treatment. Waste that meets disposal requirements is sent to the LLBG. Table 3-9 contains information on the PNNL-HTWU Waste.

Table 3-9. HWTU Summary.

Type of information	Information
Treatability groups that the process is expected to treat	PNNL- HWTU Waste.
Tri-Party Agreement milestones related to this treatability group	None.
Volume of Hanford Site mixed waste treated during CY 2001	3.1 m ³ .
Projected volume of MLLW to be treated by end of CY 2006	10 m ³ .
Treatment capacity	14 m ³ /day.
Regulatory status information:	

Table 3-9. HWTU Summary.

Type of information	Information
- Date of RCRA permit (final status)	1998 (Part A, Form 3, application 1988).
- Date facility construction started	1952
- Date system testing started	1991
- Date operations begin	1991
- Current regulatory status	Final permit.
Budget status for continued operations	Funding has been included in the current 8-year plan.
Planned completion of treatment using this facility	2025
Alternative facilities that could be used in place of this facility or to supplement capacity for this facility	Commercial treatment facilities could have capacity to treat some of the waste streams.

CY calendar year
HWTU 325 Hazardous Waste Treatment Unit
MLLW mixed low-level waste
PNNL Pacific Northwest National Laboratory
RCRA *Resource Conservation and Recovery Act of 1976*
Tri-Party Agreement *Hanford Federal Facility Agreement and Consent Order.*

3.1.10 Waste That Currently Meets Disposal Requirements

Some mixed waste does not require treatment to meet LDR requirements before disposal. The largest volume of this mixed waste is generated by the environmental restoration activities conducted under CERCLA and is transferred directly to ERDF. This waste falls under the ERDF – Direct Disposal treatability group. A second treatability group that does not require treatment is MLLW-01, LDR Compliant Waste. Most of this waste stream will be disposed of in the LLBG. A fraction of the waste in this LDR Compliant Waste treatability group currently does not meet DOE requirements for disposal, but eventually will be treated to meet these requirements. About 2 m³ were disposed of in CY 2001. Waste not meeting disposal requirements is stored. Section 3.5 summarizes the information for the ERDF and LLBG.

3.2 MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS BUT NEEDS ADAPTATION

As discussed in the following sections, processing is needed for the RH waste currently on the Hanford Site and for the RH waste expected to be generated in the future.

3.2.1 T Plant Complex For M-91 Capability

In a previous evaluation of alternatives (HNF-6287), modifying the T Plant Complex is identified as the lowest cost alternative. The modified portion of the T Plant Complex is known on the Hanford Site as the “M-91 Capability”, named for the M-91 Tri-Party Agreement milestone that requires this. The M-91 Capability also is anticipated to provide for processing of the RH TRU waste and the CH waste that cannot be accepted into the WRAP Facility. These waste types are discussed in more detail in the TRU section. Table 3-10 contains information on the M-91 Capability for MLLW.

Table 3-10. Summary of the M-91 Capability at the T Plant Complex.

Type of information	Information
Treatability groups that the process is expected to treat	MLLW-07, RH and Large Container.
Tri-Party Agreement milestones related to this treatability group	M-091-14-T01, Award commercialization contracts for treatment of RH and large-size MLLW (2003); M-91-15, Complete Acquisition of Facilities to Initiate Treatment of RH and Large-Container MLLW (2008).
Technology needed for facility	Technology needs for processing all this waste are expected to be complex; it is anticipated that in addition to developing existing technology capabilities, further technology demonstrations and deployments are required.
Projected volume of MLLW to be treated by end of CY 2006	Processing not included in baseline funding through 2006.
Treatment capacity	To be determined based on design reports.
Regulatory status information:	
- Design reports	Functional design criteria (FDC), 9/2009; critical design document (CDD), 6/2010.
- Submittal of RCRA permit application	Expected to be a modification to T Plant Complex Permit 6/2013.
- Date design and construction contract to be awarded	6/2012
- Date facility construction to be started	6/2013
- Date operations begin	10/2016
- Current regulatory status	NA
Budget status for design, construction, and operations	Included in long-range budgets, but not within the scope of this report (2001-2006).
Estimated date of completion of treatment with the assumption of available funding.	RH waste continues to be produced through the operation and decontamination and decommissioning (D&D) of tank farms and vitrification facilities; therefore, treatment will continue through at least 2032.
Alternatives for treating this waste.	Several alternatives have been considered over the past 5 years. The most attractive alternative is construction of a new modular treatment facility for these and other difficult-to-treat waste groups.

CDD	conceptual design document
CY	calendar year
D&D	decontamination and decommissioning
FDC	functional design criteria
MLLW	mixed low-level waste
TBD	to be determined
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order.</i>

3.2.2 Commercial Amalgamation

Elemental mercury waste requires amalgamation as the best demonstrated available technology (BDAT) treatment. Mercury can be present as a small-percentage component in some waste, but also can be present in high concentrations. Mercury present in concentrations >260 mg/kg requires retorting or roasting to recover the metal.

The Hanford Site inventory of mercury-bearing waste is relatively small, as is the case with inventories at other sites across the DOE Complex. As part of an effort to increase the efficiency of the treatment and disposal of this waste across the DOE Complex, the Transuranic and Mixed Waste Focus Area is leading an effort to assess the magnitude of the need for mercury-bearing waste treatment across the DOE Complex and to develop a national contract for treatment of this waste. In the Hanford Site baseline, the plan is to focus on larger volume waste categories for which treatment capability or contracts exist and await the outcome of this national coordination effort before implementing treatment of mercury-bearing waste.

Several commercial technologies have been reported to be available for some types of mercury waste. (For more information, refer to the INEEL website listed in Chapter 10.0).

Table 3-11. Commercial Amalgamation Summary.

Type of information	Information
Treatability group that the process is expected to treat	MLLW-06, Elemental Mercury.
Tri-Party Agreement milestones related to this treatability group	Proposed as part of active M-91 TPA negotiations.
Technology needed for facility	Commercial amalgamation (may also require RMERC technology).
Projected volume of MLLW to be treated by end of CY 2006	Mixed waste continues to be accumulated to obtain a more economical contract for its treatment.
Treatment capacity	Treatment capacity to support the Hanford Site needs is expected to be <10 m ³ per year. Actual treatment capacity from the national integration effort will be determined later.
Regulatory status information:	
- Design reports	NA
- Submittal of permit application	NA
- Date design and construction contract to be awarded	NA
- Date facility construction begins	NA
- Date operations begin	2005
- Current regulatory status	NA.
Budget status for design, construction, and operations	Baseline budgets assume commercial treatment beginning in 2005.
Estimated date of completion of treatment with the assumption of available funding.	Existing inventory estimated to be treated by 2007. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed through the foreseeable future.
Alternatives for treatment of this waste.	Several alternative technologies exist and will be the primary alternatives. A national effort is under way to assess needs and develop a nationwide procurement for mercury amalgamation services. An alternative would be to build the capacity for amalgamation into the M-91 capability.

CY calendar year
MLLW mixed low-level waste
Tri-Party Agreement (TPA) Hanford Federal Facility Agreement and Consent Order.

3.3 MIXED WASTE TREATABILITY GROUPS REQUIRING FURTHER CHARACTERIZATION, OR FOR WHICH TECHNOLOGY DOES NOT EXIST OR A TECHNOLOGY ASSESSMENT HAS NOT BEEN DONE

Treatment planning for these waste treatability groups is less complete and continues.

3.3.1 Treatability Groups for which Further Characterization is Needed

Many of the waste groups currently in storage were stored before the current characterization and classification systems were implemented in 1995. The waste acceptance process at that time emphasized safe storage, and the information collected on the waste was to ensure safe storage. Specific information required for treating the waste was not collected. For this waste, the adequacy of the existing characterization information needs to be re-assessed. The information needs to be supplemented as necessary before waste treatment and disposal.

The current baseline assumes that waste requiring additional characterization is characterized in sequence with and near planned treatment and disposal dates. The close coordination of waste characterization schedules with planned treatment and disposal dates has the following benefits.

- Coordination avoids long lag times between characterization and treatment and disposal, minimizing the potential need to recharacterize waste as acceptance, treatment, and disposal criteria evolve.
- Coordination allows for closer matching of characterization efforts with budget constraints.

Active negotiations are in process to establish a mixed waste disposal milestone under TPA M-91 that would include many of the waste groups currently in storage. Characterization will be performed as necessary to support the results of the active M-91 TPA negotiations.

3.3.2 Treatability Groups For Which Treatment Technology Has Not Been Selected

Some waste streams in storage have not had technology assessments or selection completed so the streams can be assigned to treatability groups for treatment in existing treatment processes. When the technology assessments for the waste in this category have been completed, many of the waste streams probably can be treated in one of the existing processes. Waste treatability groups for which treatment technologies have not been selected include the following:

- MLLW-08, Unique Waste
- MLLW-09, Lead-Acid and Cadmium Batteries
- MLLW-10, Reactive Metals
- B Plant Cell 4 Waste
- B Plant
- 241-CX Tanks
- Hexone Storage and Treatment Facility.
- 222-S T8 RH-MLLW
- 221-T RCRA Tank System

Some of these waste categories, such as MLLW-09, Lead-Acid and Cadmium Batteries and MLLW-10, Reactive Metals (Table 3-12), represent relatively small volumes. As is the case with the inventory of

mercury-bearing waste on the Hanford Site, these waste categories are common with waste categories at other sites across the DOE Complex. As part of the effort to increase the efficiency of treatment and disposal of these waste categories across the DOE Complex, the Transuranic and Mixed Waste Focus Area is leading an effort to assess the need for battery and reactive metal treatment and develop a national contract for treating this waste. In the Hanford Site baseline, the plan is to focus on larger volume waste categories for which treatment capabilities or contracts exist and await the outcome of the national coordination effort before treating these smaller waste streams.

Table 3-12. Information for Selected Treatability Groups for Which Treatment Technology Assessments have not been Completed.

Type of information	Information
Treatability groups included in this category	MLLW-08, Unique Waste, MLLW-09, Lead-Acid and Cadmium Batteries; MLLW-10, Reactive Metals.
Tri-Party Agreement milestones related to these treatability groups	M-91-00. Proposed as part of active M-91 TPA negotiations.
Technology needed for facility	
Characterization status information	
- Characterization needed defined	NA
- Characterization milestones	NA
Treatment status information:	
- Treatability testing	NA
- Feasibility analysis and reports	NA
- Bench- and pilot-scale testing reports	NA
- Research, development, and demonstration projects	NA
- Design reports	NA
- Permitting milestones	NA
- Treatment milestones	Estimated to begin treatment in 2008.
Budget status for testing, development, design, construction, and operations	Priorities within the next 5-year window are not sufficient to begin work on these treatment processes.
Estimated completion date for treatment of treatability groups with the assumption of available funding.	Existing inventory estimated to be treated by 2014. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed through the foreseeable future.

MLLW mixed low-level waste
TBD to be determined
Tri-Party Agreement *Federal Facility Agreement and Consent Order.*
(TPA)

The waste included in the B Plant Cell 4 Waste and B Plant (containment building) treatability groups is stored in a facility managed under a regulator-approved long-term surveillance and maintenance (S&M) plan. Therefore, active management of the waste is not planned in the near term. Ongoing S&M activities for the B Plant Complex treatability groups will be conducted in accordance with the approved S&M plan and associated Tri-Party Agreement commitments until DOE Headquarters decides to initiate the disposition phase or other actions required under the terms of the *Tri-Party Agreement Action Plan*, Section 8.1 or 8.3.3.

Waste in both the 241-CX Tank and the Hexone Storage and Treatment Facility treatability groups will be addressed as part of the remedial action of the 200-IS-1 Operability Unit.

In the resolution negotiations for the Notices of Deficiency to the 222-S Laboratory Complex Part B permit application, Ecology agreed that the 222-S T8 RH-MLLW can remain in the 222-S Laboratory Complex until closure. The current schedule reflects initiating cleanout of the 222-S Laboratory Complex in FY 2033 and transition to facility disposition in FY 2035.

Information concerning the 221-T RCRA Tank System Waste is included in Table 3-13.

Table 3-13. Information for the 221-T RCRA Tank System Waste for Which Treatment Technology Assessments have not been Completed.

Type of information	Facility Information
Treatability group included in this category	221-T RCRA Tank System
Tri-Party Agreement milestones related to this treatability group	Completed.
Technology needed for facility	
Characterization status information	
- Characterization needed defined	Additional characterization might be required to support waste treatment.
- Characterization milestones	NA.
Treatment status information:	
- Treatability testing	NA
- Feasibility analysis and reports	NA
- Bench- and pilot-scale testing reports	NA
- Research, development, and demonstration projects	NA
- Design reports	NA
- Permitting milestones	Complete (M-20-51)
- Treatment milestones	12/2007 for evaporation of liquid fraction only. Solids proposed to be handled with canyon disposition, in accordance with DOE-RL to Ecology letter #01-RCA-192, dated 3/29/01.
Budget status for testing, development, design, construction, and operations	Priorities within the next 5-year window are not sufficient to begin work on this waste group.
Estimated completion date for treatment of treatability group with the assumption of available funding	Priorities within the next 5-year window are not sufficient to begin work on this waste group.

DOE-RL	U.S. Department of Energy, Richland Operations Office
Ecology	Washington State Department of Ecology
MLLW	mixed low-level waste
Tri-Party Agreement	<i>Federal Facility Agreement and Consent Order</i>
UHC	underlying hazardous constituents

3.4 RADIONUCLIDE SEPARATION PLANS

For MLLW, the only process that involves extensive separations is aqueous waste treatment at ETF, discussed in Section 3.1.8. No separation activities specifically are planned for any other MLLW treatability group.

3.5 MIXED WASTE DISPOSAL

MLLW is disposed of in the LLBG mixed waste trenches, ERDF, and Trench 94 of LLBG for defueled naval reactor compartments. The mixed waste trenches and ERDF are discussed in this section. Trench 94 is not included in the scope of this report. Disposal facilities to be used for the disposal of LAW from the vitrification of HLW are discussed in Section 5.6. Plans are being made for a trench to support disposal of mixed waste spent melters from the vitrification plant.

3.5.1 Low-Level Burial Ground Mixed Waste Trenches

The LLBG mixed waste trenches (218-W-5, Trenches 31 and 34) have been constructed to provide disposal capabilities for a substantial portion of the Hanford Site RCRA mixed waste. Waste for disposal in these trenches must meet the Hanford Site Solid Waste Acceptance Criteria (HNF-EP-0063). Each disposal trench has a capacity of about 24,000 m³ air volume. The LLBG mixed waste trenches are RCRA compliant. In future years, Trenches 31 and 34 are expected to be filled. In addition to the facilities mentioned in Section 3.5, a new RCRA-compliant trench will be constructed. This trench will be used for disposal of the remaining portion of the Hanford Site RCRA mixed waste. Table 3-14 provides additional information on the mixed waste disposal trenches.

Table 3-14. Summary for Low-Level Burial Grounds Mixed Waste Trenches.

Type of information	Information
Treatability groups going to this disposal unit.	MLLW waste that meet the waste acceptance requirements.
Tri-Party Agreement milestones related to this disposal unit	M-091-13 – Completed in CY 1999. Proposed as part of active M-91 TPA negotiations.
Current combined capacity of the two existing trenches	48,000 m ³ air volume capacity; actual waste volume disposed of will be less.
Volume of waste disposed during past year (1/1-12/31/2001)	170 m ³ .
Total volume of waste disposed of since operations began	1,000 m ³ .
Regulatory status information	
- Date of RCRA or other permit	Currently operating under interim status, Part B permit application scheduled to be certified in 2002.
- Date construction started	1994
- Date disposal started	September 15, 1999 (storage operations began in 1997).
- Date operations scheduled to end	2035. This date includes future mixed waste trenches.
Budget status for testing, development, design, construction, and operations	Ongoing operations.
Expansion plans or alternatives	The Nevada Test Site was an alternative considered in the PEIS. Expansion will be required to support Hanford Site waste disposal.

DOE/EIS-0222F, *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Mixed Wastes*, U.S. Department of Energy, Washington, D.C.

CY calendar year
RCRA Resource Conservation and Recovery Act of 1976
Tri-Party Agreement (TPA) Hanford Federal Facility Agreement and Consent Order.

3.5.2 Environmental Restoration Disposal Facility

ERDF is a RCRA-compliant landfill authorized under CERCLA. The landfill is used for disposal of environmental restoration waste generated from cleanup activities. ERDF is designed to receive and dispose of low-level radioactive waste or mixed waste generated through remediation activities on the Hanford Site. The original two cells have been filled since the landfill opened in 1996. Cells 3 and 4 were constructed and are now in use. Table 3-15 summarizes ERDF information.

Table 3-15. Information for Environmental Restoration Disposal Facility.

Type of information	Information
Treatability groups going to this disposal unit.	ERDF – Direct Disposal; ERDF – Treatment
Tri-Party Agreement milestones related to this disposal facility	M-70-00, M-16-92B.
Capacity of current units (Cells 3 and 4)	1,200,000 m ³ .
Waste disposed of during past year (Cells 3 and 4)	240,000 m ³ total; 4800 of total is MLLW.
Volume of waste disposed of since start of operations (Cells 1 through 4)	1,400,000 total; 28,000 m ³ of total is MLLW.
Estimated volume of capacity to be constructed by 2006 (Cells 5 and 6)	1,200,000 m ³ .
Volume of waste expected to be disposed of from 2002 through 2006. ¹	18,000 m ³ of MLLW.
Regulatory status information	Unit is operating under a CERCLA ROD.
- Date of RCRA or other permit	CERCLA ROD issued January 1995, amended in September 1997 and March 1999.
- Date construction started	1995.
- Date disposal started	July 1996.
- Date for end of operations	2046.
Budget status for continued operations	ERDF operations are budgeted as part of the Richland Environmental Restoration Project. ERDF operations and cell construction are included in the project's budget requests.
Expansion plans or alternatives	Additional cells will be constructed as needed.

¹The volume identified in these rows is the total volume of waste forecast to be disposed of at ERDF. The location-specific data sheets report only the mixed waste fraction of waste disposed of at ERDF. Historically, mixed waste accounts for only 2% of the total waste disposed of at ERDF.

CERCLA *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
ERDF *Environmental Restoration Disposal Facility*
ROD *record of decision*
Tri-Party Agreement *Hanford Federal Facility Agreement and Consent Order.*

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4.0 TRANSURANIC/TRANSURANIC MIXED WASTE STREAMS

On the Hanford Site, all newly generated small container CH TRU/TRUM is certified through the Hanford Site TRU Program. Functions in support of certification are conducted predominantly at the WRAP Facility, but some functions are performed at other locations, including T Plant Complex, the analytical laboratories, and the generating facilities. Oversized and RH waste generated near term is stored to await processing via the M-91 capability and certification through the Hanford Site TRU Program. The disposition map in Figure 4-1 shows an overview of the anticipated processing of TRU/TRUM treatability groups. This figure shows the major waste treatability groups and the planned process for each group.

TRU/TRUM Waste Disposition Map

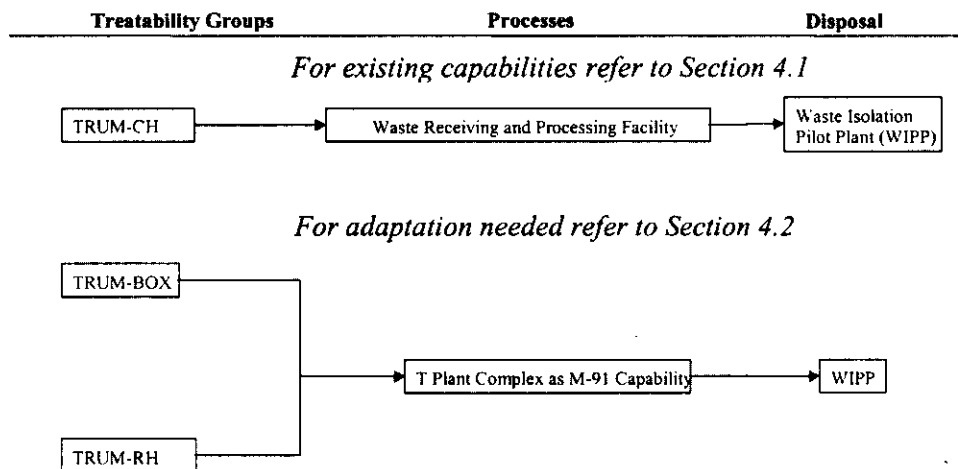


Figure 4-1. Site Disposition Map for TRUM Treatability Groups.

4.1 TRANSURANIC/TRANSURANIC MIXED WASTE STREAMS FOR WHICH PROCESSING TECHNOLOGY EXISTS - WRAP FACILITY

The primary purpose of the WRAP Facility is to certify waste to WIPP waste acceptance criteria for shipment to WIPP. The WRAP Facility provides capabilities to receive waste; confirm contents of drummed and standard waste boxes; repackage, inspect, and certify the waste to WIPP waste acceptance criteria; and provide limited processing of some specific waste types. The WRAP Facility can process only CH waste in drums or standard waste boxes. Table 4-1 provides information concerning the WRAP Facility. The WRAP Facility Part B permit application (DOE/RL-91-16) contains additional information.

Table 4-1. Information Concerning Processes at the WRAP Facility.

Type of information	Facility-specific information
Treatability group that the process is expected to treat	TRUM-CH.
Tri-Party Agreement milestones related to this treatability group	M-91-02 Completed.
Volume of Hanford Site TRU/TRUM waste processed during CY 2001	120 m ³ through NDE, 120 m ³ through NDA, and 32 m ³ through the gloveboxes.
Projected volume of TRU/TRUM to be processed by end of CY 2006	1,000 m ³ .
Treatment capacity	Permitted capacity is 13 m ³ /day.
Regulatory status information:	
- Date of RCRA permit application	6/99
- Date treatment contract established	NA
- Date facility construction started	Groundbreaking 4/18/94
- Date system testing started	Acceptance test procedures initiated on 2/13/96
- Date for commencement of operations	Phase I operations [shipping and receiving and NDE/NDA] initiated 3/12/97 Phase II operations (Process Area) initiated 9/9/98
- Current regulatory status	Operating under interim status; transition to final status stayed on appeal.
Budget status for continued operations	Funding has been requested in the FY 2002 and FY 2003 budgets and currently is planned to be requested through the FY 2006 budgets.
Planned completion of treatment using this process	2032.
Alternative processes that could be used in place of this process or to supplement capacity for this process.	No other single facility within the DOE Complex embraces the scope of the capabilities of the WRAP Facility. The complete set of processes is available, though, at several other DOE locations: INEEL, Rocky Flats, Savannah River Site (SRS), and Los Alamos. In addition, repackaging and characterization capabilities have been developed that can be deployed at sites, using temporary rather than permanent installation.

CY	calendar year	NDA	nondestructive assay
DOE	U.S. Department of Energy	NDE	nondestructive examination
INEEL	Idaho National Engineering and Environmental Laboratory	Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order
Los Alamos	Los Alamos National Laboratory	SRS	Savannah River Site
		TBD	to be determined
		WRAP	Waste Receiving and Processing Facility

4.2 TRANSURANIC/TRANSURANIC MIXED TREATABILITY GROUPS FOR WHICH CHARACTERIZATION AND PROCESSING TECHNOLOGIES NEED ADAPTATION

Current planning includes modifying the T Plant Complex to provide treatment capability to meet the M-91 Milestone requirements. The requirements are to provide for the processing of RH TRU/TRUM and oversize containers of TRU/TRUM waste. The T Plant Complex (M-91 Capability) also is anticipated to provide for processing of unique TRU/TRUM waste streams such as the sludge from K Basins (part of the TRU-PCB treatability group). The RH and sludge waste processing need to use remote processing methods and technologies. Existing technologies need to be adapted and better technologies developed to improve operational efficiency. The technology information is needed as the process designs are developed. Table 4-2 provides information for the T Plant Complex modification.

Table 4-2. Information for Modifications of T Plant Complex to meet M-91 Processing Commitments.

Type of information	Information
Treatability group that the process is expected to treat	TRUM-BOX; TRUM-RH.
Tri-Party Agreement milestones related to these treatability groups	M-91-01, M-91-05, M-91-06, M-91-14-T01, M-91-15, M-91-18, M-91-19-T01, M-91-20, M-91-21-T01, M-91-22.
Technology needed for facility	Remote handling and processing technologies.
Projected volume of TRU/TRUM to be treated by end of CY 2006	Processing not included in baseline funding through 2006.
Treatment capacity	To be determined by design reports.
Regulatory status information:	
- Design reports	Conceptual design document (sludge) 6/29/2001 (completed) Functional design criteria (RH and boxes) proposed 2007 Conceptual design report (RH and boxes) proposed 2008.
- Submittal of permit application	To be determined during design.
- Date design and construction contract to be established	2009.
- Date facility construction to be started	2010.
- Date for commencement of operations	2013.
- Current regulatory status	In planning.
Budget status for design, construction, and operations	Included in long-range budgets, but not within the 2006 window of this report.
Estimated date of processing completion of treatability groups with the assumption of available funding.	2032.
Alternatives for processing of this waste.	Construction of a new facility or a set of modules.

Note: TRU waste processing will be performed as necessary to support the results of active M-91 TPA negotiations.

CY	calendar year
RH	remote handled
Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order
TRU	transuranic
TRUM	transuranic mixed

4.3 TRANSURANIC WASTE TREATABILITY GROUPS WITH PROCESSING TECHNOLOGY NOT SELECTED

This section covers treatability groups that do not have a processing method. Before a processing method can be specified for these media, additional technology assessments need to be performed and/or further characterization must occur. Process planning for the following treatability groups continues:

- PUREX Containment Bldg. Waste
- PUREX Storage Tunnel Waste

- 324 Bldg. Radiochemical Engineering Cell Waste
- TRU-PCB.

The wastes associated with these treatability groups need to be characterized to meet WIPP waste acceptance criteria. RH equipment and techniques are needed to support characterization for most of the waste. Also, for PCB-contaminated waste, thermal treatment might be required to destroy the PCB content.

Waste transfers to certain onsite TSD units are performed in accordance with HNF-EP-0063. This document specifies waste characterization criteria necessary to support proper interim storage and future processing, storage, and/or disposal requirements for TRU and TRUM waste. Future Hanford Site waste management requirements related to these streams are currently the subject of ongoing TPA M-91 negotiations.

4.3.1 PUREX Storage Tunnels Waste

The PUREX Storage Tunnels are a RCRA-regulated storage unit and are subject to Hanford Facility RCRA permit conditions. Waste in the PUREX Storage Tunnel Waste treatability group is being stored at a final status miscellaneous unit. Under the Hanford Facility RCRA Permit, closure of the PUREX Storage Tunnels must be coordinated with the final closure plan for the PUREX facility. Therefore, PUREX Storage Tunnel Waste disposition will be coordinated with PUREX Containment Bldg. Waste discussed in Section 4.3.2.

4.3.2 PUREX Containment Building Waste

Ongoing S&M activities for the PUREX Containment Bldg. Waste treatability group are conducted in accordance with the approved S&M plan and associated Tri-Party Agreement commitments until DOE Headquarters decides to initiate the disposition phase or actions required by the lead regulatory agency pursuant to the terms of the Tri-Party Agreement Action Plan, Sections 8.1 or 8.3.3. The waste included in the PUREX Containment Bldg. Waste treatability group is stored in a facility managed under a regulator-approved long-term S&M plan. Therefore, active management of the waste is not planned in the near term.

4.3.3 324 Building Radiochemical Engineering Cell Waste

The 324 Building Radiochemical Engineering Cell (REC) TRU and TRUM waste is being dispositioned in accordance with Tri-Party Agreement Milestone M-89-00 due October 31, 2005. Under this milestone, TRU and TRUM waste is removed from the 324 Building and transferred to onsite TSD units.

4.3.4 TRU-PCB

The preferred alternative is disposal of the PCB-contaminated TRU waste at the WIPP. WIPP is pursuing approval to dispose of TRU TSCA waste with PCB concentrations above 50 ppm. Upon approval of WIPP to accept TSCA waste, these wastes will be evaluated for disposal at WIPP. If WIPP disposal is not possible, a specific technology for PCB treatment will be selected during the M-91 scoping activities, which could include chemical treatment (e.g., chemical oxidation, reduction, or dechlorination) or thermal treatment (e.g., molten salt oxidation, vitrification, pyrolysis, steam reforming).

4.4 DISPOSAL OF TRANSURANIC/TRANSURANIC MIXED WASTE

As noted in Figure 4-1, the current plan is to ship certified TRU/TRUM waste to WIPP. Waste being disposed of at WIPP must meet WIPP waste acceptance requirements. Waste is shipped to WIPP in appropriate containers and special packages. Table 4-3 provides specific information on the disposal of TRU/TRUM waste.

Table 4-3. Information for the Disposal of Transuranic/Transuranic Mixed Waste at the Waste Isolation Pilot Plant.

Type of information	Information
Treatability groups going to this disposal facility.	TRUM-RH, TRU-BOX, TRU-CH, and TRU-PCB. Treatability groups for TRU waste with processing technologies not selected also will need to be sent to WIPP as waste is qualified.
Tri-Party Agreement milestones related to this disposal facility	None.
Hanford Site waste disposed of during CY 2001 (1/1-12/31)	44 m ³ (210 drums) (non-mixed).
Volume of waste expected to be certified for disposal through 2006.	~400 m ³ .
Regulatory status information	
- Date of RCRA or other permit	1999
- Date construction started	NA
- Date disposal started	1999
- Date operations end	2034 (based on projected WIPP closure date).
Budget status for testing, development, design, construction, and operations	WIPP budget is not part of Hanford Site budget.
Expansion plans or alternatives	NA

CH contact handled
CY calendar year
PCB polychlorinated biphenyl
RH remote handled
Tri-Party Agreement *Hanford Federal Facility Agreement and Consent Order*
TRU transuranic
WIPP Waste Isolation Pilot Plant.

4.5 RADIONUCLIDE SEPARATION PLANS

No plans exist for radionuclide separation as a processing step for TRU/TRUM waste because radionuclide separation is not required for these treatability groups to meet WIPP disposal criteria.

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5.0 HIGH-LEVEL WASTE STREAMS

Figure 5-1 shows an overview of the anticipated treatment of HLW treatability groups. The basic process will be for the SST System waste to be moved to the DST System as space becomes available. The waste will be moved from the DSTs to a waste pretreatment or separation unit where most of the high-activity material will be removed and sent to the high-activity vitrification unit. The larger volume of remaining low-activity waste will be sent to a separate low-activity vitrification unit. The vitrification processes will convert the wastes into a stable glass-like material for interim storage and eventual disposal. It has been determined per the *Framework Agreement for Management of PCBs in Hanford Tank Waste*, dated August 31, 2001, that some DSTs contain PCB remediation waste. The risk-based disposal approval process addresses the disposal of PCB remediation waste through the waste treatment plant (WTP) where PCBs have been addressed as a constituent of concern. Figure 5-1 shows the HLW treatability groups and the planned treatment process.

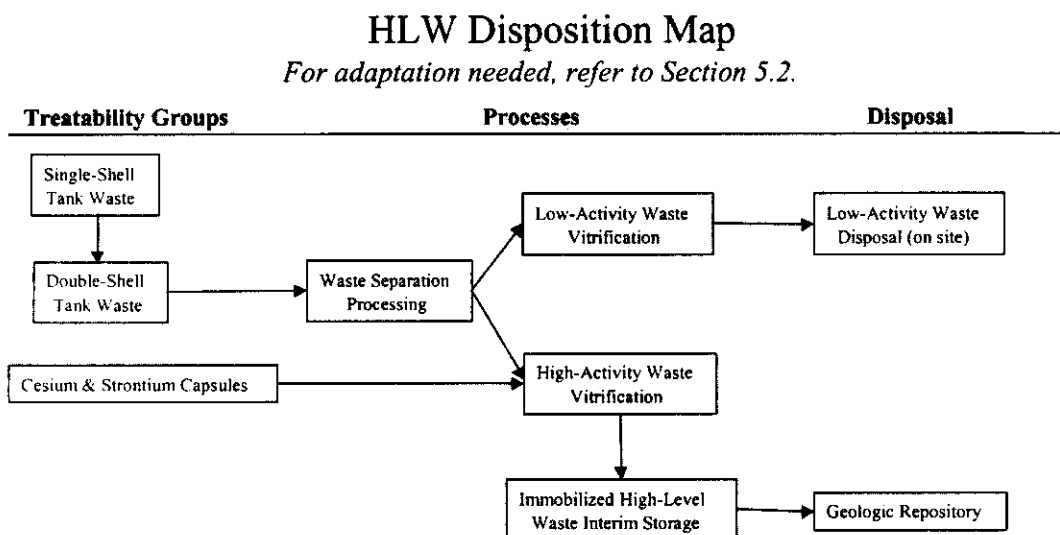


Figure 5-1. High-Level Waste Disposition Map.

5.1 EXISTING TREATMENT PROCESSES

No HLW LDR treatment processes currently are available for treating the Hanford Site waste. The Hanford Site does have HLW evaporators used for many years to concentrate HLW in the tanks and to make tank space available for new or transferred waste. The 242-A Evaporator operation is not LDR treatment; however, operations result in sending a portion of the tank waste (condensate) to LDR treatment at LERF/ETF. The 242-A Evaporator operation is not covered in this LDR report.

5.2 WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY IS NEEDED

The LDR-specified treatment technology for HLW is vitrification. Planning for vitrification processes for the Hanford Site is ongoing and is a high priority. Details of the contract for completion of the design and construction of the treatment units for the HLW are available on the Internet¹. Additional details of the

¹ Internet addresses are given in the reference list (Chapter 10).

planning for HLW management also are available on the Internet¹. Table 5-1 summarizes the key information.

Table 5-1. Information for High-Level Waste Vitrification.

Type of information	Information
Treatability groups that the process is expected to treat	DST Waste; SST Waste, and Cesium and Strontium Capsules.
Tri-Party Agreement milestones related to these treatability groups	M-044-00, Issue Characterization Deliverables; M-062-00, Complete Pretreatment Processing/Vitrification; M-92-00, Acquisition of New Facilities; M-90-00, New Facilities for immobilized high-level waste (IHLW) and immobilized low-activity waste (ILAW); M-20-00, Permitting for Canister Storage Building/IHLW and ILAW.
Technology needed for facility	Vitrification technology has been used at both Savannah River Site and West Valley, but needs some modifications to be applicable to Hanford Site waste.
Projected volume of HLW to be treated by end of CY 2006	0 – First processing of HLW is scheduled for 2007.
Treatment capacity	To be determined by final design.
Regulatory status information:	
- Submittal of RCRA permit application	WTP: April 2000 DST System: Revised Part B Application expected 8/2003 WESF: TBD under M-20 milestone.
- Date design and construction contract established	2000
- Date facility construction begins	TBD
- Date operations to begin	2007
- Current regulatory status	WESF: Operating under interim status DST: Operating under interim status SST: Operating under interim status WTP: In design
Budget status for design, construction, and operations	Funding is available for FY 2002 to continue design and plans for construction. Funding for FY 2003 and beyond is contingent on Congressional budgets and actions.
Estimated treatment completion date of treatability group with the assumption of available funding.	2028 (M-62-00).
Alternatives for treatment of this waste.	None

CY	calendar year	ILAW	immobilized low-activity waste
DST	double-shell tank	SST	single-shell tank
FY	fiscal year	Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
HLW	high-level waste	WESF	Waste Encapsulation and Storage Facility
IHLW	immobilized high-level waste	WTP	Waste Treatment Plant

5.3 RADIONUCLIDE SEPARATION

The tank waste will be sent to the WTP where the waste will be separated into HLW and LAW fractions and treated to meet LDR standards.

5.4 STORAGE OF VITRIFIED WASTE

Initial canisters of vitrified HLW will be placed in storage in the existing Canister Storage Building, pending final disposal. Additional modules of the Canister Storage Building will be built as needed. The maximum need will be determined at a later date and depends on both the vitrification rate and the ability to ship waste from the Hanford Site to a national repository.

5.5 SHIPMENT OF HIGH-LEVEL WASTE TO A NATIONAL REPOSITORY

A national repository is expected to be prepared for the HLW and for the spent nuclear fuel accumulating at commercial nuclear power plants. Shipments dates are uncertain at this time, but will become more specific when site selection is finalized and the site is licensed and the national repository constructed and prepared to receive the HLW. These activities are beyond the scope of this report.

5.6 DISPOSAL OF THE LOW-ACTIVITY WASTE ONSITE

The vitrified LAW will be disposed of onsite in a RCRA subtitle C TSD unit. The tank farm supplemental environmental impact statement (SEIS) constrains the start of definitive design of the ILAW trench. Start of definitive design cannot proceed until the preferred alternative is selected and the ROD is issued. The current status of the TSD unit is shown in Table 5-2.

Table 5-2. Information for Low-Activity Waste Disposal.

Type of information	Specific Information
Treatability groups going to this disposal facility.	LAW fraction from DST Waste and SST Waste treatability groups.
Tri-Party Agreement milestones related to this disposal facility	M-090-00, New facilities for IHLW and ILAW; M-20-00, Permitting for ILAW.
Regulatory status information	
- Date of RCRA or other permit	Subject to completion of the SEIS and Tri-Party Agreement negotiations.
- Date construction started	Subject to completion of the SEIS and Tri-Party Agreement negotiations.
- Date disposal starts	2008 after the start of the WTP.
- Date for end of operations	~2025 (M-60-00) Complete immobilization of ILAW.
Budget status for testing, development, design, construction, and operations	Budget currently exists to start the SEIS.
Expansion plans or alternatives	Being evaluated for SEIS.

DST	double-shell tank
IHLW	immobilized high-level waste
ILAW	immobilized low-activity waste
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
SEIS	supplemental environmental impact statement
SST	single-shell tank
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
WTP	Waste Treatment Plant

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6.0 TREATMENT OF POTENTIAL MIXED WASTE

Potential mixed waste is identified in Volume 1, Appendix C, of this report. Some of the materials as managed in the future could result in the generation of mixed waste, which then would be assigned to an existing or new treatability group. If the material is assigned to an existing treatability group, treatment can be considered along with that of the other location-specific waste streams within that treatability group. Other potential mixed waste will require new or modified treatment processes. Treatment plans for these waste streams will be further defined when the streams are determined to be mixed waste. Other materials will be determined not to be mixed waste and will be handled accordingly.

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7.0 SUMMARY OF CHARACTERIZATION INFORMATION

As part of generation of any waste, a generating unit must take steps necessary to confirm the proper management of this waste. This includes identifying proper radioactive classification, understanding the physical matrix, properly designating the waste, and, where applicable, identifying the appropriate underlying hazardous constituents. Types of information that can be used to characterize waste can include data from analysis of the waste and knowledge of the materials and/or process used to generate the waste. The information must be sufficient to quantify constituents of regulatory concern and to determine waste characteristics and unit-specific waste acceptance criteria.

This section discusses and summarizes the waste treatability groups and the planned characterization activities for the waste. Waste must be sufficiently characterized so the waste can be stored and managed properly. In addition, waste must be sufficiently characterized before treatment to ensure that the proper treatment processes are applied and that the resultant treated waste meets LDR standards. Table 7-1 summarizes the planned characterization activities for each of the treatability groups. Additional detail can be found on the individual location-specific data sheets (Volume 1, Appendix B). One column of information from Table 7-1 is reproduced in Table 2-2 of Volume 1.

Table 7-1. Summary of Characterization Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Additional characterization activities	Planned characterization schedule	Related Tri-Party Agreement milestone
221-T RCRA Tank System	T Plant Complex waste	3.3.2	Additional characterization might be required to support waste treatment.	Will be done in conjunction with T Plant Complex Canyon disposition.	Completed.
222-S T8 RH-MLLW	222-S Laboratory Complex T8 tunnel waste	3.3.2	As required to initiate cleanout of 222-S.	2033	None.
241-CX Tanks	241-CX Tanks	3.3.2	Additional characterization will be required to support 200-IS-1 Operable Unit studies.	Central Plateau Negotiations currently underway will address the milestones and associated schedule for characterization and closure of the tanks.	Under negotiation.
324 Bldg. Radiochemical Engineering Cell Waste	324 Building Radiochemical Engineering Cells	4.3.1	No further characterization planned for transfer to CWC. Additional characterization could be required to meet WIPP WAC.	Completed.	M-89-00.
618-4 DU/Oil Drums	Depleted Uranium in Oil from 618-4 Burial Ground	3.1.4	Characterization was performed in 1998. No further characterization is necessary.	Completed.	M-16-03I.

Table 7-1. Summary of Characterization Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Additional characterization activities	Planned characterization schedule	Related Tri-Party Agreement milestone
B Plant	B Plant Containment Building Storage	3.3.2	To be determined under Tri-Party Agreement Section 8.0.	To be determined under Tri-Party Agreement Section 8.0.	Addressed under Section 8.0 of the Tri-Party Agreement.
B Plant Cell 4 Waste	B Plant Complex Cell 4 Waste	3.3.2	To be determined under Tri-Party Agreement Section 8.0.	To be determined under Tri-Party Agreement Section 8.0.	Addressed under Section 8.0 of the Tri-Party Agreement.
Cesium and Strontium Capsules	Cesium and Strontium Capsules	5.2	None.	Completed.	None.
DST Waste	DST Waste	5.2	Additional information may be required.	Ongoing.	M-50, M-51, M-61, M-62, M-90.
ERDF – Direct Disposal	ERDF – Direct Disposal	3.5.2	Characterized as generated.	Ongoing.	M-16-00.
ERDF – Treatment	ERDF – Treatment	3.1.7	Characterized as generated.	Ongoing.	M-16-00.
Hexone Storage and Treatment Facility	Hexone Storage and Treatment Facility	3.3.2	Additional characterization will be required to support 200-IS-1 Operable Unit studies.	Central Plateau negotiations currently underway will address the milestones and associated schedule for characterization and closure of the tanks.	Under negotiation.
LERF/ETF Liquid Waste	LERF/ETF Liquid Waste	3.1.8	Characterization performed as generated.	Ongoing.	M-26-05 H, J, & L.
MLLW-01	LDR-Compliant Waste	3.1.10 and 3.1.6	Characterization performed as generated ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-02	Inorganic Non-Debris	3.1.1	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-03	Organic Non-Debris	3.1.3	As necessary to meet treatment facility waste acceptance criteria ¹ .	M-91-12, M-91-12A, and Proposed M-91 ² .	M-91-12, M-91-12A, and Proposed M-91 ² .
MLLW-04A	O/C Hazardous Debris	3.1.3	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-04B	Non-O/C Hazardous Debris	3.1.2	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-05	Elemental Lead	3.1.2	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-06	Elemental Mercury	3.2.2	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-07	RH and Large Container	3.2.1	As necessary to meet treatment facility waste acceptance criteria ¹ .	M-91-10 and Proposed M-91 ² .	M-91-10 and Proposed M-91 ² .

Table 7-1. Summary of Characterization Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Additional characterization activities	Planned characterization schedule	Related Tri-Party Agreement milestone
MLLW-08	Unique Waste	3.3.2	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-09	Lead Acid & Cadmium Batteries	3.3.2	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
MLLW-10	Reactive Metals	3.3.2	As necessary to meet treatment facility waste acceptance criteria ¹ .	Proposed M-91 ² .	Proposed M-91 ² .
PNNL-HWTU	PNNL Laboratory Waste	3.1.9	Characterization performed as generated.	Proposed M-91 ² .	Proposed M-91 ² .
PUREX Containment Bldg. Waste	PUREX Containment Building	4.3.1	To be determined under Tri-Party Agreement Section 8.0.	To be determined under Tri-Party Agreement Section 8.0.	Addressed under Section 8.0 of the Tri-Party Agreement.
PUREX Storage Tunnel Waste	PUREX Storage Tunnels	4.3.1	As necessary to meet WIPP waste acceptance criteria.	2027	None.
Purgewater Storage and Treatment Facility	PSTF	3.1.8	Characterization performed as generated.	Ongoing.	Addressed under Appendix F of the Tri-Party Agreement in WHC-MR-0039.
SST Waste	Single Shell Tank System	5.2	Further information may be required.	Ongoing.	M-50, M-51, M61, M-62, M-90.
T Plant EC-1 Condenser	T Plant Complex EC-1 Condenser	3.1.5	Completed.	Completed.	None.
TRUM-Box	M-91 T Plant TRUM, Large Boxed	4.2	As necessary to meet WIPP waste acceptance criteria.	Proposed M-91 ² .	Proposed M-91 ² .
TRUM-CH	WRAP TRUM	4.1	As necessary to meet WIPP waste acceptance criteria.	Proposed M-91 ² .	Proposed M-91 ² .
TRUM-RH	M-91 T Plant TRUM, RH	4.2	As necessary to meet WIPP waste acceptance criteria.	Proposed M-91 ² .	Proposed M-91 ² .
TRU-PCB	PCB TRUM and/or PCB TRU, CH	4.3	As necessary to meet WIPP WAC	Before WIPP closure (~2034).	None.

¹ Newly generated waste in these categories is fully characterized as generated. For waste in inventory before 1995, additional characterization could be required before treatment.

² Characterization will be performed as necessary to support the results of the active M-91 TPA negotiations.

CH	contact handled	RH	remote handled
DST	double-shell tank	SST	single-shell tank
ERDF	Environmental Restoration Disposal Facility	TRU	transuranic
LDR	land disposal restrictions	WESF	Waste Encapsulation and Storage Facility
O/C	organic/carbonaceous	WIPP	Waste Isolation Pilot Plant
PCB	polychlorinated biphenyl	WRAP	Waste Receiving and Processing Facility
PUREX	plutonium-uranium extraction (facility or process)		

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8.0 SUMMARY OF TREATMENT AND DISPOSAL INFORMATION

This section summarizes the waste treatability groups and the volume of waste that will be treated for eventual disposal. Table 8-1 contains information on treatment and Table 8-2 contains the information on disposal. The treatability groups are in alphabetical order. Certain information from Tables 8-1 and 8-2 is reproduced in Table 2-2 of Volume 1.

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Table 8-1. Summary of Treatment Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Treatment process	Volume currently stored (m ³) ¹	Projected generation volume 2002 through 2006 (m ³) ¹	Projected volume to be treated 2002 through 2006 (m ³) ¹	Planned treatment period	Tri-Party Agreement milestone
221-T RCRA Tank System	T Plant Complex Waste	3.3.2	Not yet decided.	63	0	0	2025	None. Refer to T Plant Complex Closure Plan (DOE/RL-95-36).
222-S T8 RH-MLLW	222-S Laboratory Complex T8 tunnel waste	3.3.2	Not yet decided.	0.20	0	0	2033	None. Refer to 222-S Closure Plan (DOE/RL-91-27).
241-CX Tanks	241-CX Tanks	3.3.2	Not yet decided.	3.0	0	0	Central Plateau negotiations are currently underway.	Central Plateau negotiations are currently underway.
324 Bldg. Radiochemical Engineering Cell Waste	324 Building Radiochemical Engineering Cells	4.3.1	Not yet decided.	5.0	10	0	Before WIPP Closure (~2034).	M-89-00.
618-4 DU/Oil Drums	Depleted Uranium in Oil from 618-4 Burial Ground	3.1.4	Commercial-thermal.	55	170	220	TBD under M-16-031.	M-16-031.
B Plant	B Plant Containment Building Storage	3.3.2	Not yet decided.	290,000 kilograms	0	0	To be determined under the Tri-Party Agreement, Section 8.0.	Addressed under the Tri-Party Agreement, Section 8.0.
B Plant Cell 4 Waste	B Plant Complex Cell 4 Waste	3.3.2	Not yet decided.	1.4	0	0	To be determined under Tri-Party Agreement Section 8.0.	Addressed under the Tri-Party Agreement, Section 8.0.
Cesium and Strontium Capsules	Cesium and Strontium Capsules	5.2	Vitrification.	2.0	0	0	2028 per M-50.	M-92.
DST Waste	DST Waste	5.2	WTP.	80,000	49,000	0	2008-2028 per M-50.	M-50, M-51, M-61, M-62, M-90.

Table 8-1. Summary of Treatment Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Treatment process	Volume currently stored (m ³) ¹	Projected generation volume 2002 through 2006 (m ³) ¹	Projected volume to be treated 2002 through 2006 (m ³) ¹	Planned treatment period	Tri-Party Agreement milestone
ERDF – Direct Disposal	ERDF – Direct Disposal	3.5.2	No treatment needed for direct disposal.	20	18,000	No treatment needed.	NA	Treatment and disposal are performed under a CERCLA ROD.
ERDF – Treatment	ERDF – Treatment	3.1.7	ERDF treatment.	6.0	2,000	2,000	Through 2046.	Treatment and disposal are performed under a CERCLA ROD.
Hexone Storage and Treatment Facility	Hexone Storage and Treatment Facility	3.3.2	Not yet decided.	1.1	0	Central Plateau negotiations are currently underway.	Central Plateau negotiations are currently underway.	Central Plateau negotiation are currently underway.
LERF/ETF Liquid Waste	LERF/ETF Liquid Waste	3.1.8	ETF.	28,000	400,000	430,000	Through 2032.	M-26-05 H, J, & L.
MLLW-01	LDR-Compliant Waste	3.1.10 & 3.1.6	No treatment required.	1,100	280	No treatment required.	NA	Proposed M-91.
MLLW-02	Inorganic Non-Debris	3.1.1	Commercial-Stabilization.	2,700	74	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-03	Organic Non-Debris	3.1.3	Commercial-Thermal.	800	140	Proposed M-91 ²	Through 2046 ³	M-91-12a, M-91-12, and proposed M-91.
MLLW-04A	O/C Hazardous Debris	3.1.3	Commercial-Thermal.	1,700	730	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-04B	Non-O/C Hazardous Debris	3.1.2	Commercial-Macro.	160	800	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-05	Elemental Lead	3.1.2	Commercial-Macro.	450	80	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-06	Elemental Mercury	3.2.2	Commercial amalgamation.	13	1.3	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-07	RH and Large Container	3.2.1	M-91 MLLW.	66	1,400	Proposed M-91 ²	Through 2046 ³	M-91.

Table 8-1. Summary of Treatment Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Treatment process	Volume currently stored (m ³) ¹	Projected generation volume 2002 through 2006 (m ³) ¹	Projected volume to be treated 2002 through 2006 (m ³) ¹	Planned treatment period	Tri-Party Agreement milestone
MLLW-08	Unique Waste	3.3.2	Not yet decided.	21	0	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-09	Lead Acid and Cadmium Batteries	3.3.2	Not yet decided.	8.4	4.1	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
MLLW-10	Reactive Metals	3.3.2	Not yet decided.	25	1.5	Proposed M-91 ²	Through 2046 ³	Proposed M-91.
PNNL-HWTU Waste	PNNL Laboratory Waste	3.1.9	HWTU, ATG.	2.3	130	Proposed M-91 ²	Through 2025	None.
PUREX Containment Bldg. Waste	PUREX Containment Building	4.3.2	Not yet decided.	1.0	0	0	To be determined under the Tri-Party Agreement, Section 8.0.	Addressed under the Tri-Party Agreement, Section 8.0.
PUREX Storage Tunnel Waste	PUREX Storage Tunnels	4.3.1	Addressed under the Tri-Party Agreement, Section 8.0.	2,800	0	0	Coordinated with PUREX Facility Containment Building Waste.	None.
Purgewater Storage and Treatment Facility	PSTF	3.1.8	Solar evaporation at PSTF.	0	13,000	13,000	Ongoing.	None.
SST Waste	Single-Shell Tank System	5.2	WTP.	130,000	0	0	2008-2028 per M-50.	M-50, M-51, M-61, M-62, M-90.
T Plant EC-1 Condenser	T Plant EC-1 Condenser	3.1.5	Debris macro-encapsulation/microencapsulation.	32	0	0	2007	None.
TRUM-BOX	M-91 T Plant TRU, Large Boxed	4.2	M-91 TRU.	160	0	0	M-91.	None.
TRUM-CH	WRAP TRUM	4.1	WRAP Facility.	360	1,400	1,000	Before WIPP closure (~2034).	None.
TRUM-RH	M-91 T Plant TRUM, RH	4.2	M-91 TRU.	45	19	0	Before WIPP Closure (~2034).	None.
TRU-PCB	PCB TRUM and/or PCB TRU, CH	4.3	Not yet determined.	80	52	0	To be determined by WIPP.	None.

¹Volume numbers in this table have been rounded to two significant figures.

Table 8-1. Summary of Treatment Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Report section	Treatment process	Volume currently stored (m ³) ¹	Projected generation volume 2002 through 2006 (m ³) ¹	Projected volume to be treated 2002 through 2006 (m ³) ¹	Planned treatment period	Tri-Party Agreement milestone
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¹Treatment will be performed as necessary to support the results of the active M-91 TPA negotiations.

³2046 is taken as the end of waste processing activities onsite.

DST	double-shell tank	SST	single-shell tank
ERDF	Environmental Restoration Disposal Facility	TRU	transuranic
NDA	nondestructive assay	WESF	Waste Encapsulation and Storage Facility
PCB	polychlorinated biphenyls	WRAP	Waste Receiving and Processing Facility
PUREX	plutonium-uranium extraction (facility or process)	WTP	Waste Treatment Plant

Table 8-2. Summary of Disposal Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Disposal location	Volume to be disposed of through 2006 (m ³) ^{1,2}	Planned disposal period	Tri-Party Agreement milestone
221-T RCRA Tank System	T Plant Complex Waste	Not yet decided.	0	Liquid fraction 2007/2008. Solid fraction to be determined by Canyon Disposition Initiative and/or T Plant Complex closure.	None.
222-S T8 RH-MLLW	222-S Laboratory Complex T8 tunnel waste	Mixed waste trenches.	0	2035	None.
241-CX Tanks	241-CX Tanks	Not yet decided.	0	Central Plateau negotiations are currently underway.	Central Plateau negotiations are currently underway.
324 Bldg. Radiochemical Engineering Cell Waste	324 Building Radiochemical Engineering Cells	WIPP.	0	Before WIPP closure (~2035).	Refer to 324 REC Closure Plan.
618-4 DU/Oil Drums	Depleted Uranium in Oil from 618-4 Burial Ground	ERDF.	TBD under M-16-03I.	TBD under M-16-03I.	TBD under M-16-03I.
B Plant	B Plant Containment Building Storage	Not yet decided.	0	To be determined by Tri-Party Agreement Section 8.0.	Addressed under Section 8.0 of the Tri-Party Agreement.
B Plant Cell 4 Waste	B Plant Complex Cell 4 Waste	Not yet decided.	0	To be determined by Tri-Party Agreement Section 8.0.	Addressed under Section 8.0 of the Tri-Party Agreement.

Table 8-2. Summary of Disposal Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Disposal location	Volume to be disposed of through 2006 (m ³) ^{1,2}	Planned disposal period	Tri-Party Agreement milestone
Cesium and Strontium Capsules	Cesium and Strontium Capsules	HLW Repository.	0	2028 per M-50.	M-92.
DST Waste	DST Waste	HLW repository and onsite vaults.	0	2028 per M-50.	M-50, M-51, M61, M-90.
ERDF – Direct Disposal	ERDF – Direct Disposal	ERDF.	18,000	Through 2046.	Disposal performed under CERCLA ROD.
ERDF – Treatment	ERDF – Treatment	ERDF.	2,000	Through 2046.	Treatment and disposal are performed under a CERCLA ROD.
Hexone Storage and Treatment Facility	Hexone Storage and Treatment Facility	Not yet decided.	0	Central Plateau negotiations are currently underway.	Central Plateau negotiations are currently underway.
LERF/ETF Liquid Waste	LERF/ETF liquid waste	SALDS.	430,000	Through 2032	M-26-05 H, J, & L.
MLLW-01	LDR-Compliant Waste	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-02	Inorganic Non-Debris	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-03	Organic Non-Debris	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	M-91-12a, M-91-12 and proposed M-91 ³ .
MLLW-04A	O/C Hazardous Debris	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-04B	Non-O/C Hazardous Debris	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-05	Elemental Lead	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-06	Elemental Mercury	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-07	RH and Large Container	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-08	Unique Waste	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-09	Lead Acid and Cadmium Batteries	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .
MLLW-10	Reactive Metals	Mixed waste trenches.	Proposed M-91 ³	Through 2046 ⁴	Proposed M-91 ³ .

Table 8-2. Summary of Disposal Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Disposal location	Volume to be disposed of through 2006 (m ³) ^{1,2}	Planned disposal period	Tri-Party Agreement milestone
PNNL-HWTU Waste	PNNL Laboratory Waste	Mixed waste trenches.	Proposed M-91 ³ .	Through 2025	Proposed M-91 ³ .
PUREX Containment Bldg. Waste	PUREX Containment Building	Not yet decided.	0	To be determined by Tri-Party Agreement Section 8.0.	Addressed under Section 8.0 of the Tri-Party Agreement.
PUREX Storage Tunnel Waste	PUREX Storage Tunnels	Not yet decided.	0	Coordinate with PUREX Containment Bldg. Waste.	None.
Purgewater Storage and Treatment Facility	PSTF	The residues and sludges remaining in the modular tanks will be removed, treated as necessary to meet the ERDF waste acceptance criteria and be disposed in ERDF.	600	Will be determined as part of the remaining revisions being made to WHC-MR-0039.	Addressed under Appendix F of the Tri-Party Agreement and WHC-MR-0039.
SST Waste	Single-Shell Tank System	HLW repository and onsite vaults.	0	2028 per M-50.	M-50, M-51, M61, M-90.
T Plant EC-1 Condenser	T Plant complex EC-1 Condenser	Mixed waste trenches	Proposed M-91 ³ .	2007	Proposed M-91 ³ .
TRUM-BOX	M-91 T Plant TRUM, large boxed	WIPP.	Proposed M-91 ³ .	Through WIPP closure (~2035).	Proposed M-91 ³ .
TRUM-CH	WRAP TRUM	WIPP.	Proposed M-91 ³ .	Through WIPP closure (~2035).	Proposed M-91 ³ .
TRUM-RH	M-91 T Plant TRUM, remote handled	WIPP.	Proposed M-91 ³ .	Through WIPP closure (~2035).	Proposed M-91 ³ .

Table 8-2. Summary of Disposal Information for Each Treatability Group.

Treatability Group Identifier	Treatability Group Name	Disposal location	Volume to be disposed of through 2006 (m ³) ^{1,2}	Planned disposal period	Tri-Party Agreement milestone
TRU-PCB	PCB TRUM and/or PCB TRU, CH	WIPP.	0	Through WIPP closure (~2035).	None.

¹Volume numbers in this table have been rounded to two significant figures.

²Disposal volumes used are as-generated volumes without consideration of changes during treatment.

³Treatment will be performed as necessary to support the results of the active M-91 TPA negotiations.

⁴2046 is taken as the end of waste processing activities onsite.

DST double-shell tank

ERDF Environmental Restoration Disposal Facility

PCB polychlorinated biphenyl

PUREX plutonium-uranium extraction (Facility)

SST single-shell tank

TRU transuranic

WESF Waste Encapsulation and Storage Facility

WRAP Waste Receiving and Processing Facility

9.0 TRI-PARTY AGREEMENT MILESTONE TABLES

The Tri-Party Agreement is a legal document covering Hanford Site environmental compliance and cleanup activities. The Tri-Party Agreement Action Plan implements the agreements among Ecology, DOE (both the DOE-RL and the DOE-ORP), and the EPA, and is enforceable.

9.1 DOCUMENTATION AND RECORDS

The Tri Party Agreement Action Plan, Section 9.0, "Documentation and Records", defines the documents to be generated under the Action Plan, the classification and listing of primary and secondary documents, and the record systems to be implemented to preserve and access the documentation. The Action Plan, Section 12, "Changes to the Agreement", establishes a process for the parties to propose and implement changes to elements of the Agreement, the Action Plan, and Appendices, and supporting plans (specifically, the annual update of the LDR report).

9.2 LAND DISPOSAL RESTRICTIONS REPORT UPDATE AND REVISION

The Parties intend to issue one report annually in accordance with the requirements of Tri-Party Agreement Interim Milestone M-26-01. Each annual update is issued as a complete replacement that supersedes the prior-year LDR report. The parties have agreed to conduct workshops this summer to address a variety of LDR reporting improvements agreed to during the TPA primary document process on last year's report (CY 2000 LDR report). Specifically, the summer workshops will discuss tracking commitments contained in the LDR Report, how to accomplish within-year changes in the annual LDR report; and how to accomplish year-to-year changes in the LDR report.

Table 9-1 identifies the current, active Tri-Party Agreement milestones through 2028. Pending TPA change control actions are not included.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
D-001-00	09/30/2004	DOE SHALL COMPLETE INTERIM STABILIZATION OF ALL 29 SINGLE-SHELL TANKS.
D-001-00-R12 THRU R-23	04/30/2002 THRU 09/30/2003	DOE SHALL, ON A QUARTERLY BASIS, SUBMIT TO ECOLOGY A WRITTEN REPORT DOCUMENTING TANK STABILIZATION ACTIVITIES THAT OCCURRED DURING THE PERIOD COVERED BY THE REPORT.
D-001-10V	09/30/2003	THE PERCENTAGE OF PUMPABLE LIQUID REMAINING TO BE REMOVED (WILL BE EQUAL TO OR LESS THAN) 2% OF TOTAL LIQUID.
D-001-02-T01	03/30/2001	COMPLETE PUMPING OF T-104, AND T-110.
D-001-04-T01	04/15/2002	COMPLETE PUMPING OF TANKS U-103, U-105, U-102 & U-109.
D-001-06-T01	09/30/2003	COMPLETE PUMPING OF A-101 AX-101.
D-001-08-T01	02/28/2003	COMPLETE PUMPING SX-105, SX-103, SX-101 & U-106.
D-001-09-T01	06/30/2003	COMPLETE TANKS BY -105 AND BY-106.
D-001-11-T01	08/30/2003	COMPLETE PUMPING U-108, U-107, S-111 & SX-102.
D-001-12V	09/30/2002	TOTAL PUMPABLE LIQUID < OR = 18% OF TOTAL LIQUID.
D-001-13	11/30/2002	INITIATE PUMP OF TANKS U-111, S-109, S-112, S-101 & S-107.
D-001-13-T01	09/30/2003	COMPLETE PUMPING U-111, S-109, S-112, S-101, AND S-107.
M-013-00M	12/31/2002	SUBMIT 3 200 NPL RI/FS (RFI/CMS) WORK PLANS.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-013-00N	12/31/2003	SUBMIT 3 200 NPL RI/FS (RFI/CMS) WORK PLANS.
M-013-00O	12/31/2004	SUBMIT 3 200 NPL RI/FS (RFI/CMS) WORK PLANS.
M-013-00P	12/31/2005	SUBMIT 4 200 NPL RI/FS (RFI/CMS) WORK PLANS.
M-015-00	12/31/2008	COMPLETE THE RI/FS (OR RFI/CMS) PROCESS FOR ALL OPERABLE UNITS.
M-015-00C	12/31/2008	COMPLETE ALL 200 AREA NON-TANK FARM OPERABLE UNIT PRE-ROD SITE INVESTIGATIONS UNDER APPROVED WORK PLAN SCHEDULES.
M-016-00	09/30/2018	COMPLETE REMEDIAL ACTIONS FOR ALL NON-TANK FARM OPERABLE UNITS. COMPLETE DECONTAMINATION AND DECOMMISSIONING OF ALL 100 AREA BUILDINGS AND STRUCTURES (EXCEPT 105-B, 105-C, 105-D, 105-DR, 105-F, 105-H, 105-KE, 105-KW, AND 105-N REACTOR BUILDINGS).
M-016-00A	TBD	COMPLETE ALL 100 AREA REMEDIAL ACTIONS.
M-016-00B	TBD	COMPLETE ALL 300 AREA REMEDIAL ACTIONS.
M-016-00F	12/31/2001	ESTABLISH DATE FOR COMPLETION OF ALL 100 AREA REMEDIAL ACTIONS.
M-016-01	TBD	COMPLETE 100-N AREA DECONTAMINATION AND DECOMMISSIONING.
M-016-03A	06/30/2002	ESTABLISH DATE FOR COMPLETION OF 300 AREA REMEDIAL ACTIONS.
M-016-03G	09/30/2002	ESTABLISH AN ENVIRONMENTAL RESTORATION DISPOSAL FACILITY (ERDF) STAGING AREA THAT IS READY TO RECEIVE DRUMMED WASTE FROM THE 618-4 BURIAL GROUND IN ACCORDANCE WITH AN ERDF RECORD OF DECISION AMENDMENT.
M-016-03H	12/31/2003	COMPLETE REMEDIATION OF THE WASTE SITES IN THE 300-FF-1 OPERABLE UNIT TO INCLUDE EXCAVATION, VERIFICATION, AND REGRADING, INCLUDING THE 618-4 BURIAL GROUND IN ACCORDANCE WITH AN APPROVED REMEDIAL DESIGN REPORT/REMEDIAL ACTION WORK PLAN.
M-016-03I	TBD	COMPLETE TREATMENT OF DRUMMED WASTE FROM THE 618-4 BURIAL GROUND IN ACCORDANCE WITH AN APPROVED REMEDIAL DESIGN REPORT/REMEDIAL ACTION WORK PLAN.
M-016-10A	08/01/2003	INITIATE REMEDIAL ACTION IN THE 100-KR-1 OPERABLE UNIT.
M-020-00	02/28/2004	SUBMIT PART B PERMIT APPLICATIONS OR CLOSURE/POST CLOSURE PLANS FOR ALL RCRA TSD UNITS.
M-020-54	02/28/2004	SUBMIT 241-CX TANK SYSTEM CLOSURE/POST CLOSURE PLAN TO ECOLOGY IN COORDINATION WITH THE WORK PLAN FOR THE INFRASTRUCTURE WASTE GROUP (TO BE COORDINATED WITH M-13-00K).
M-020-56	06/30/2002	SUBMIT CANISTER STORAGE FACILITY PART B DANGEROUS WASTE PERMIT APPLICATION TO ECOLOGY.
M-020-57	08/31/2002	SUBMIT ILAW DISPOSAL FACILITY CERTIFIED PART B PERMIT APPLICATION TO ECOLOGY.
M-023-22-T01	02/28/2002	SUBMIT DOCUMENT IDENTIFYING AND DESCRIBING DOE'S EXISTING SST IN-TANK SURVEILLANCE AND MONITORING PROGRAM.
M-023-23	03/31/2002	SUBMIT SINGLE-SHELL TANK SYSTEM LEAK DETECTION AND MONITORING FUNCTIONS AND REQUIREMENTS DOCUMENT FOR ECOLOGY APPROVAL.
M-023-24	06/30/2002	SUBMIT SINGLE-SHELL TANK SYSTEM INTEGRITY ASSESSMENT REPORT AND ASSOCIATED CERTIFICATION(S) AND DETERMINATION(S) PURSUANT TO 40 CFR 265.191.
M-023-25	09/30/2004	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) FOR SSTs AX-103, B-101, T-101, T-109, TX-103, TX-104, B-107, B-108, B-109, BY-108, BX-110, TX-116, C-102, C-105, BX-109, TY-105, U-110, A-106, C-112, SX-111, SX-112, S-107, C-103, AND TX-105.
M-023-25A	03/31/2002	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN WEEKLY LIQUID OBSERVATION MONITORING FOR FOUR SSTs.
M-023-25B	09/30/2002	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN WEEKLY LIQUID OBSERVATION MONITORING FOR FOUR SSTs.
M-023-25C	03/31/2003	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs)

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
		AND BEGIN WEEKLY LIQUID OBSERVATION MONITORING FOR FOUR SSTs.
M-023-25D	09/30/2003	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN WEEKLY LIQUID OBSERVATION MONITORING FOR FOUR SSTs.
M-023-25E	09/30/2003	PROCURE NECESSARY EQUIPMENT TO SUPPORT ADDITIONAL LOW MONITORING SYSTEMS.
M-023-25F	03/31/2004	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN WEEKLY LIQUID OBSERVATION MONITORING FOR FOUR ADDITIONAL SSTs.
M-023-25G	09/30/2004	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN WEEKLY LIQUID OBSERVATION MONITORING FOR FOUR ADDITIONAL SSTs.
M-024-00N	12/31/2002	INSTALL RCRA GROUNDWATER MONITORING WELLS AT THE RATE OF UP TO 50 (IF REQUIRED).
M-024-00O	12/31/2003	INSTALL RCRA GROUNDWATER MONITORING WELLS AT THE RATE OF UP TO 50 (IF REQUIRED).
M-024-00P	12/31/2004	INSTALL RCRA GROUNDWATER MONITORING WELLS AT THE RATE OF UP TO 50 (IF REQUIRED).
M-024-00Q	12/31/2005	INSTALL RCRA GROUNDWATER MONITORING WELLS AT THE RATE OF UP TO 50 (IF REQUIRED).
M-024-00R	12/31/2006	INSTALL RCRA GROUNDWATER MONITORING WELLS AT THE RATE OF UP TO 50 (IF REQUIRED).
M-026-01L	04/30/2002	SUBMIT AN ANNUAL HANFORD LAND DISPOSAL RESTRICTIONS REPORT IN ACCORDANCE WITH AGREEMENT REQUIREMENTS TO COVER THE PERIOD FROM 1-1 OF THE PREVIOUS YEAR THROUGH 12-31 OF THE REPORTING YEAR. (SEE M-26-01I FOR COMPLETE WORDING OF THIS MILESTONE).
M-026-01M	04/30/2003	SUBMIT AN ANNUAL HANFORD LAND DISPOSAL RESTRICTIONS REPORT IN ACCORDANCE WITH AGREEMENT REQUIREMENTS TO COVER THE PERIOD FROM 4-1 OF THE PREVIOUS YEAR THROUGH 3-31 OF THE REPORTING YEAR. (SEE M-26-01I FOR COMPLETE WORDING OF THIS MILESTONE).
M-026-05J	08/31/2003	SUBMIT TO EPA AND ECOLOGY AN EVALUATION OF DEVELOPMENT STATUS OF TRITIUM TREATMENT TECHNOLOGY THAT WOULD BE PERTINENT TO THE CLEANUP AND MANAGEMENT OF TRITIATED WASTE WATER (e.g., THE 242-A EVAPORATOR PROCESS CONDENSATE LIQUID EFFLUENT) AND TRITIUM CONTAMINATED GROUNDWATER AT THE HANFORD SITE.
M-026-05L	08/31/2005	SUBMIT TO EPA AND ECOLOGY AN EVALUATION OF DEVELOPMENT STATUS OF TRITIUM TREATMENT TECHNOLOGY THAT WOULD BE PERTINENT TO THE CLEANUP AND MANAGEMENT OF TRITIATED WASTE WATER (e.g., THE 242-A EVAPORATOR PROCESS CONDENSATE LIQUID EFFLUENT) AND TRITIUM CONTAMINATED GROUNDWATER AT THE HANFORD SITE.
M-034-00A	07/31/2007	COMPLETE REMOVAL OF SPENT NUCLEAR FUEL, SLUDGE, DEBRIS, AND WATER AT DOE'S K BASINS.
M-034-08	12/31/2002	INITIATE FULL SCALE K EAST BASIN SLUDGE REMOVAL.
M-034-10	08/31/2004	COMPLETE SLUDGE REMOVAL FROM K BASINS.
M-034-12-T01	09/30/2002	COMPLETE CONSTRUCTION OF K EAST BASIN SLUDGE AND WATER SYSTEM TO SUPPORT SPENT NUCLEAR FUEL REMOVAL.
M-034-21-T01	10/31/2005	INITIATE FULL SCALE K WEST BASIN WATER REMOVAL.
M-034-22	08/31/2006	COMPLETE K WEST BASIN WATER REMOVAL.
M-034-23	09/30/2004	INITIATE FULL SCALE K EAST BASIN WATER REMOVAL.
M-034-24	09/30/2005	COMPLETE K EAST BASIN WATER REMOVAL.
M-042-00	TBD	PROVIDE ADDITIONAL DOUBLE-SHELL TANK CAPACITY.
M-043-00	06/30/2005	COMPLETE TANK FARM UPGRADES.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-043-15	03/31/2002	START CONSTRUCTION FOR UPGRADES IN THE FOURTH TANK FARM.
M-043-16	06/30/2003	START CONSTRUCTION FOR UPGRADES IN THE FIFTH TANK FARM.
M-044-00A	09/30/2002	COMPLETE DELIVERY OF INFORMATION REQUIREMENTS AS IDENTIFIED IN THE ANNUALLY SUBMITTED WIRD.
M-044-15F	09/30/2002	COMPLETE CHARACTERIZATION DELIVERABLES CONSISTENT WITH WIRD DEVELOPED FOR FY 2000. REPORTING ON PROGRESS OF THESE DELIVERABLES WILL BE DONE IN QUARTERLY REPORTS DUE AT THE END OF THE MONTH FOLLOWING EACH FISCAL YEAR QUARTER. THE FOURTH QUARTER REPORT DUE AT THE END OF OCTOBER WILL ALSO INCLUDE YEAR END SUMMARY OF ALL DELIVERABLES DUE FOR THE FISCAL YEAR.
M-044-16F	09/30/2002	COMPLETE INPUT OF CHARACTERIZATION INFORMATION FOR HLW TANKS FOR WHICH SAMPLING AND ANALYSIS WERE COMPLETED PER WIRD, INTO AN ELECTRONIC DATABASE. OFF-SITE ACCESS TO THE DATABASE CONTAINING TANK WASTE CHARACTERIZATION INFORMATION WILL BE MADE AVAILABLE TO EPA AND ECOLOGY.
M-045-00	09/30/2024	COMPLETE CLOSURE OF ALL SINGLE SHELL TANK FARMS.
M-045-00B	09/30/2006	COMPLETE "NEAR TERM" SST WASTE RETRIEVAL ACTIVITIES.
M-045-00C	04/30/2002	COMPLETE RENEGOTIATION OF SECOND PHASE (I.E., 9/30/2006 THROUGH 9/30/2015) SST WASTE RETRIEVAL ACTIVITIES.
M-045-00D	06/30/2011	COMPLETE RENEGOTIATION OF THE REMAINDER OF THE SST WASTE RETRIEVAL AND CLOSURE PROGRAM.
M-045-02	09/30/2017	SUBMIT ANNUAL UPDATES TO SST RETRIEVAL SEQUENCE DOCUMENT.
M-045-02K through -02Z	September 30 each year	SUBMIT ANNUAL UPDATE OF SST RETRIEVAL SEQUENCE DOCUMENT. (SEE TEXT OF M-45-02 FOR FURTHER DETAILS).
M-045-03C	09/30/2005	COMPLETE FULL SCALE SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION AT SINGLE-SHELL TANK S-112.
M-045-03D	05/31/2003	COMPLETE S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).
M-045-03E	09/30/2004	COMPLETE S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION).
M-045-03F	TBD	COMPLETE FULL SCALE SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION AT TANK C-104.
M-045-03G	06/30/2004	COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL COLD DEMONSTRATION.
M-045-03H	09/30/2004	COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).
M-045-03I	09/30/2006	COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION).
M-045-05	09/30/2018	RETRIEVE WASTE FROM ALL REMAINING SINGLE-SHELL TANKS. COMPLETE WASTE RETRIEVAL FROM ALL REMAINING SINGLE-SHELL TANKS.
M-045-05-T05	09/30/2007	INITIATE TANK RETRIEVAL FROM FIVE ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T06	09/30/2008	INITIATE TANK RETRIEVAL FROM FIVE ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T07	09/30/2009	INITIATE TANK RETRIEVAL FROM SEVEN ADDITIONAL SINGLE-SHELL TANKS.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
		TANKS.
M-045-05-T08	09/30/2010	INITIATE TANK RETRIEVAL FROM EIGHT ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T09	09/30/2011	INITIATE TANK RETRIEVAL FROM TEN ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T10	09/30/2012	INITIATE TANK RETRIEVAL FROM 12 ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T11	09/30/2013	INITIATE TANK RETRIEVAL FROM 14 ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T12	09/30/2014	INITIATE TANK RETRIEVAL FROM 17 ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T13	09/30/2015	INITIATE TANK RETRIEVAL FROM 20 ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T14	09/30/2016	INITIATE TANK RETRIEVAL FROM 20 ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T15	09/30/2017	INITIATE TANK RETRIEVAL FROM 20 ADDITIONAL SINGLE-SHELL TANKS.
M-045-05-T16	10/30/2002	SUBMIT S-102 INITIAL WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT.
M-045-05-T17	04/30/2004	SUBMIT SECOND TANK INITIAL WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT.
M-045-05A	09/30/2006	COMPLETE INITIAL WASTE RETRIEVAL FROM TANK S-102.
M-045-05B	03/31/2004	COMPLETE S-102 INITIAL RETRIEVAL PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).
M-045-05C	11/30/2005	COMPLETE S-102 INITIAL WASTE RETRIEVAL PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION).
M-045-05D	12/31/2002	ESTABLISH COMPLETION DATE FOR THE SECOND TANK, INITIAL WASTE RETRIEVAL.
M-045-05E	06/30/2006	COMPLETE SECOND TANK INITIAL RETRIEVAL PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).
M-045-05F	TBD	COMPLETE SECOND INITIAL WASTE RETRIEVAL PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION).
M-045-06	09/30/2024	COMPLETE CLOSURE OF ALL SINGLE-SHELL TANK FARMS IN ACCORDANCE WITH APPROVED CLOSURE/POST CLOSURE PLAN(S).
M-045-06-T03	03/31/2012	INITIATE CLOSURE ACTIONS ON AN OPERABLE UNIT OR TANK FARM BASIS. CLOSURE SHALL FOLLOW COMPLETION OF THE RETRIEVAL ACTIONS UNDER PROPOSED MILESTONE M-45-05. CLOSURE WILL BE DEFINED IN AN APPROVED CLOSURE PLAN FOR THE DEMONSTRATION FARM. FINAL CLOSURE IS DEFINED AS REGULATORY APPROVAL OF COMPLETION OF CLOSURE ACTIONS.
M-045-06-T04	03/31/2014	COMPLETE CLOSURE ACTIONS ON ONE OPERABLE UNIT OR TANK FARM.
M-045-06-T05	06/30/2002	SUBMIT TANK FARM CLOSURE/POST-CLOSURE WORKPLAN UPDATE.
M-045-06-T06	06/30/2004	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07A	06/30/2006	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07B	06/30/2008	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07C	06/30/2010	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07D	06/30/2012	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07E	06/30/2014	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07F	06/30/2016	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07G	06/30/2018	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07H	06/30/2020	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-06-T07I	06/30/2022	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-045-06-T07J	06/30/2024	SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.
M-045-11	09/30/2003	COMPLETE 244-AR VAULT INTERIM STABILIZATION.
M-045-12-T01	02/28/2002	SUBMIT AN OPTIONS REPORT DOCUMENTING DOE ASSESSMENT OF ACTIONS THAT COULD BE TAKEN TO INCREASE AVAILABLE TANK SPACE FOR SST WASTE RETRIEVAL.
M-045-55	02/28/2004	SUBMIT TO ECOLOGY FOR REVIEW AND APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT A PHASE I RFI REPORT INTEGRATING RESULTS OF DATA GATHERING ACTIVITIES AND EVALUATIONS FOR WMAS S-SX, T, TX-TY, AND B-BX-BY AND RELATED ACTIVITIES, INCLUDING GROUNDWATER MONITORING AND IMPACTS ASSESSMENT USING HANFORD SITE GROUNDWATER MODELS, WITH CONCLUSIONS AND RECOMMENDATIONS.
M-045-55-T02	10/31/2002	SUBMIT TO ECOLOGY FOR REVIEW AND COMMENT AS AN AGREEMENT SECONDARY DOCUMENT A FIELD INVESTIGATION REPORT PURSUANT TO THE SITE-SPECIFIC SST WMA PHASE I RFI/CMS WORK PLAN ADDENDA FOR WMA B-BX-BY.
M-045-55-T03	06/30/2003	SUBMIT TO ECOLOGY FOR REVIEW AND COMMENT AS AN AGREEMENT SECONDARY DOCUMENT A FIELD INVESTIGATION REPORT PURSUANT TO THE SITE-SPECIFIC SST WMA PHASE I RFI/CMS WORK PLAN ADDENDA FOR WMA T AND WMA TX-TY.
M-045-56	TBD	COMPLETE IMPLEMENTATION OF AGREED-TO INTERIM MEASURES.
M-045-58	TBD	SUBMIT TO ECOLOGY FOR REVIEW AND APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT A CORRECTIVE MEASURES STUDY FOR INTERIM CORRECTIVE MEASURES (PENDING RESULTS AND CONCLUSIONS IN THE PHASE I RFI REPORT-MILESTONE M-45-55 OR SUBSEQUENT RFI REPORTS).
M-045-59	TBD	CONTROL SURFACE WATER INFILTRATION PATHWAYS AS NEEDED TO CONTROL OR SIGNIFICANTLY REDUCE THE LIKELIHOOD OF MIGRATION OF SUBSURFACE CONTAMINATION TO GROUNDWATER AT THE SST WMAS (PENDING THE CMS REPORT, MILESTONE M-45-58, AND IMPLEMENTATION OF OTHER INTERIM CORRECTIVE MEASURES.
M-045-60	TBD	SUBMIT TO ECOLOGY FOR REVIEW AND APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT DOE'S RFI/CMS WORK PLAN FOR SST WMAS.
M-046-00I	09/30/2002	DOUBLE-SHELL TANK SPACE EVALUATION.
M-046-00J	09/30/2003	DOUBLE-SHELL TANK SPACE EVALUATION.
M-046-00K	09/30/2004	DOUBLE-SHELL TANK SPACE EVALUATION.
M-046-00L	09/30/2005	DOUBLE-SHELL TANK SPACE EVALUATION.
M-046-00M	09/30/2006	DOUBLE-SHELL TANK SPACE EVALUATION.
M-046-01H	03/15/2002	CONCURRENCE OF ADDITIONAL TANK ACQUISITION. THE THREE PARTIES SHALL MEET TO ESTABLISH NEW MILESTONES, IF REQUIRED, FOR ACQUISITION OF ADDITIONAL TANKS.
M-046-01I	11/30/2002	CONCURRENCE OF ADDITIONAL TANK ACQUISITION. THE THREE PARTIES SHALL MEET TO ESTABLISH NEW MILESTONES, IF REQUIRED, FOR ACQUISITION OF ADDITIONAL TANKS.
M-046-01J	11/30/2003	CONCURRENCE OF ADDITIONAL TANK ACQUISITION. THE THREE PARTIES SHALL MEET TO ESTABLISH NEW MILESTONES, IF REQUIRED, FOR ACQUISITION OF ADDITIONAL TANKS.
M-046-01K	11/30/2004	CONCURRENCE OF ADDITIONAL TANK ACQUISITION. THE THREE PARTIES SHALL MEET TO ESTABLISH NEW MILESTONES, IF REQUIRED, FOR ACQUISITION OF ADDITIONAL TANKS.
M-046-01L	11/30/2005	CONCURRENCE OF ADDITIONAL TANK ACQUISITION. THE THREE PARTIES SHALL MEET TO ESTABLISH NEW MILESTONES, IF REQUIRED, FOR ACQUISITION OF ADDITIONAL TANKS.
M-046-01M	11/30/2006	CONCURRENCE OF ADDITIONAL TANK ACQUISITION. THE THREE PARTIES SHALL MEET TO ESTABLISH NEW MILESTONES, IF REQUIRED, FOR ACQUISITION OF ADDITIONAL TANKS.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-047-00	02/28/2018	DOE, DOE's PROJECT HANFORD MANAGEMENT CONTRACTOR (PHMC), AND ASSOCIATED CONTRACTORS SHALL COMPLETE ALL WORK NECESSARY IN SUPPORT OF THE ACQUISITION AND PHASE I OPERATIONS OF HANFORD SITE HIGH-LEVEL RADIOACTIVE TANK WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES.
M-047-01	03/31/2006	COMPLETE CONSTRUCTION OF THE TRANSFER SYSTEM FROM THE 241-AP TANK FARM TO THE BNFL FACILITY TO SUPPORT THE START OF HOT COMMISSIONING OF THE PHASE I TANK WASTE TREATMENT COMPLEX.
M-047-02	03/31/2007	COMPLETE STARTUP AND TURNOVER ACTIVITIES FOR REQUIRED TRANSFER SYSTEM UPGRADES TO ALLOW TRANSFER OF FIRST HIGH-LEVEL WASTE FEED TO THE PRETREATMENT / TREATMENT COMPLEX.
M-047-03	07/30/2004	START CONSTRUCTION OF WASTE RETRIEVAL AND MOBILIZATION SYSTEMS FOR SELECTED INITIAL HIGH-LEVEL WASTE FEED TANK.
M-047-03A	02/28/2007	COMPLETE STARTUP AND TURNOVER ACTIVITIES FOR WASTE RETRIEVAL AND MOBILIZATION SYSTEMS FOR SELECTED INITIAL HIGH-LEVEL WASTE FEED TANK.
M-047-04	06/30/2007	COMPLETE STARTUP AND TURNOVER ACTIVITIES FOR REQUIRED TRANSFER SYSTEM UPGRADES TO ALLOW TRANSFER OF FIRST LOW-ACTIVITY WASTE FEED TO THE PRETREATMENT / TREATMENT COMPLEX.
M-047-05	05/31/2004	START CONSTRUCTION OF WASTE RETRIEVAL AND MOBILIZATION SYSTEMS FOR SELECTED INITIAL LOW-ACTIVITY WASTE FEED TANK (OTHER THAN AZ-101 AND AZ-AZ-102).
M-047-05A	04/30/2006	COMPLETE STARTUP AND TURNOVER ACTIVITIES FOR WASTE RETRIEVAL AND MOBILIZATION SYSTEMS FOR SELECTED INITIAL LOW-ACTIVITY WASTE FEED TANK (OTHER THAN AZ-101 OR AZ-102).
M-047-06	06/30/2010	COMPLETE NEGOTIATION OF ADDITIONAL AGREEMENT REQUIREMENTS (MILESTONES, TARGET DATES, AND ASSOCIATED LANGUAGE) GOVERNING WORK NECESSARY TO SUPPORT COMPLETION OF TREATMENT COMPLEX PHASE I OPERATIONS BY 2018.
M-048-00	09/30/2007	COMPLETE TANK INTEGRITY ASSESSMENT ACTIVITIES FOR HANFORD'S DOUBLE SHELL TANK (DST) SYSTEM.
M-048-10	09/30/2002	SUBMIT RESULTS OF (4) DST'S NOT PREVIOUSLY EXAMINED. SUBMIT A WRITTEN REPORT TO ECOLOGY DOCUMENTING RESULTS OF ULTRASONIC TESTING OF THE PRIMARY TANK WALLS IN FOUR (4) DST'S NOT PREVIOUSLY EXAMINED BY ULTRASONIC TESTING.
M-048-11	09/30/2003	SUBMIT RESULTS OF (4) DST'S NOT PREVIOUSLY EXAMINED. SUBMIT A WRITTEN REPORT TO ECOLOGY DOCUMENTING RESULTS OF ULTRASONIC TESTING OF THE PRIMARY TANK WALLS IN FOUR (4) DST'S NOT PREVIOUSLY EXAMINED BY ULTRASONIC TESTING.
M-048-12	09/30/2004	SUBMIT RESULTS OF (4) DST'S NOT PREVIOUSLY EXAMINED. SUBMIT A WRITTEN REPORT TO ECOLOGY DOCUMENTING RESULTS OF ULTRASONIC TESTING OF THE PRIMARY TANK WALLS IN FOUR (4) DST'S NOT PREVIOUSLY EXAMINED BY ULTRASONIC TESTING.
M-048-13	09/30/2005	SUBMIT RESULTS OF (4) DST'S NOT PREVIOUSLY EXAMINED. SUBMIT A WRITTEN REPORT TO ECOLOGY DOCUMENTING RESULTS OF ULTRASONIC TESTING OF THE PRIMARY TANK WALLS IN FOUR (4) DST'S NOT PREVIOUSLY EXAMINED BY ULTRASONIC TESTING.
M-048-14	03/31/2006	SUBMIT WRITTEN INTEGRITY REPORT FOR THE DOUBLE-SHELL TANK SYSTEM.
M-048-15	09/30/2007	SUBMIT A REPORT TO ECOLOGY FOR THE RE-EXAMINATION OF SIX (6) DST'S BY ULTRASONIC TESTING.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-050-00	12/31/2028	COMPLETE PRETREATMENT PROCESSING OF HANFORD TANK WASTE
M-051-00	12/31/2028	COMPLETE VITRIFICATION OF HANFORD HIGH LEVEL TANK WASTE.
M-061-00	12/31/2028	COMPLETE PRETREATMENT AND IMMOBILIZATION OF HANFORD LOW ACTIVITY WASTE (LAW).
M-062-00	12/31/2028	COMPLETE PRETREATMENT PROCESSING AND VITRIFICATION OF HANFORD HIGH LEVEL (HLW) AND LOW ACTIVITY (LAW).
M-062-00A	02/28/2018	COMPLETE PRETREATMENT PROCESSING AND VITRIFICATION OF HANFORD HLW AND LAW PHASE I TANK WASTES.
M-062-01D	01/31/2002	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01E	07/31/2002	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01F	01/31/2003	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01G	07/31/2003	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01H	01/31/2004	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01I	07/31/2004	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01J	01/31/2005	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01K	07/31/2005	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01L	01/31/2006	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-01M	07/31/2006	SUBMIT SEMI-ANNUAL PROJECT COMPLIANCE REPORT.
M-062-03	12/31/2006	SUBMIT DOE PETITION FOR RCRA DELISTING OF VITRIFIED HLW.
M-062-06	07/31/2001	START OF CONSTRUCTION - PHASE I TREATMENT COMPLEX.
M-062-07	TBD	CONSTRUCTION PROGRESS MILESTONES (2) - PHASE I TREATMENT COMPLEX.
M-062-08	07/31/2005	SUBMITTAL OF HANFORD TANK WASTE PHASE II TREATMENT ALTERNATIVES REPORT.
M-062-09	12/31/2007	START (HOT) COMMISSIONING - PHASE I TREATMENT COMPLEX.
M-062-10	12/31/2009	START COMMERCIAL OPERATIONS - PHASE I TREATMENT COMPLEX.
M-062-11	12/31/2012	SUBMITTAL OF HANFORD TANK WASTE TREATMENT PHASE II PLAN.
M-062-12	TBD	ISSUANCE OF DOE AUTHORIZATION TO PROCEED - PHASE II TREATMENT.
M-083-00	TBD	COMPLETE STABILIZATION OF PROCESS AREAS, AND OTHER PFP CLEANOUT ACTIONS RESULTING FROM THE EIS ROD, WITHIN PFP.
M-083-03	TBD	COMPLETE PLUTONIUM FINISHING PLANT TRANSITION PHASE NEGOTIATIONS.
M-083-08	TBD	COMPLETE ALL REQUIREMENTS NECESSARY TO SHIP ALL ROCKY FLATS ASH MIXED WASTE COVERED BY THIS CHANGE PACKAGE (M-83-00-01) TO WIPP.
M-083-09	08/31/2002	COMPLETE REPACKAGING AND SHIPMENT OF ALL HANFORD ASH MIXED WASTE CURRENTLY STORED IN PFP TO THE CENTRAL WASTE COMPLEX FOR STORAGE.
M-083-10	03/31/2002	COMPLETE SOLIDIFICATION OF SELECTED PLUTONIUM-BEARING SOLUTIONS CURRENTLY LOCATED IN PFP AND SHIPMENT TO THE CENTRAL WASTE COMPLEX FOR STORAGE.
M-083-11	01/30/2004	COMPLETE REPACKAGING AND SHIPMENT OF SS&C MIXED WASTE CURRENTLY STORED IN PFP TO THE CENTRAL WASTE COMPLEX FOR STORAGE.
M-089-00	10/31/2005	COMPLETE CLOSURE OF NON-PERMITTED MIXED WASTE UNITS IN THE 324 BUILDING REC B-CELL, REC D-CELL, AND HIGH LEVEL VAULT.
M-090-00	TBD	COMPLETE ACQUISITION OF NEW FACILITIES, MODIFICATION OF EXISTING FACILITIES, AND/OR MODIFICATION OF PLANNED FACILITIES AS NECESSARY FOR STORAGE OF HANFORD SITE IHLW AND ILAW, AND DISPOSAL OF ILAW.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-090-08	07/31/2004	INITIATE ILAW DISPOSAL FACILITY CONSTRUCTION. INITIATION OF CONSTRUCTION OCCURS WHEN THE CONTRACTOR COMMENCES EXCAVATION OF THE RCRA DISPOSAL FACILITY.
M-090-09-T01	03/30/2004	COMPLETE ILAW DISPOSAL FACILITY DETAILED DESIGN.
M-090-10	01/31/2007	INITIATE PLACEMENT OF ILAW WASTE CANISTERS IN ILAW DISPOSAL FACILITY. (LOW ACTIVITY WASTE PACKAGES PLACED WITHIN THESE FACILITIES WILL BE RETRIEVABLE).
M-090-11	02/01/2007	COMPLETE CANISTER STORAGE FACILITY CONSTRUCTION.
M-091-00	TBD	COMPLETE THE ACQUISITION OF NEW FACILITIES, MODIFICATION OF EXISTING FACILITIES, AND/OR MODIFICATION OF PLANNED FACILITIES NECESSARY FOR STORAGE, TREATMENT/PROCESSING, AND DISPOSAL OF ALL HANFORD SITE TRU/TRUM, LLMW, AND GTC3.
M-091-01	TBD	COMPLETE THE ACQUISITION OF NEW FACILITIES, MODIFICATION OF EXISTING FACILITIES, AND/OR MODIFICATION OF PLANNED FACILITIES NECESSARY FOR STORAGE, AND TREATMENT/PROCESSING PRIOR TO DISPOSAL OF ALL HANFORD SITE POST 1970 TRU/TRUM.
M-091-05-T01	12/31/2002	COMPLETE AND SUBMIT TRU/TRUM RETRIEVAL AND PROCESSING FACILITY ENGINEERING STUDY/FUNCTIONAL DESIGN CRITERIA STUDY TO ECOLOGY.
M-091-06-T01	09/30/2003	AWARD NECESSARY PRIVATIZED CONTRACTS FOR PROCESSING REMOTE HANDLED (RH) AND LARGE SIZE TRU/TRUM.
M-091-07	09/30/2004	COMPLETE PROJECT W-113 FOR POST 1970 CH TRU/TRUM RETRIEVAL.
M-091-08-T01	06/30/2005	COMPLETE CONSTRUCTION AND INITIATE HOT OPERATIONS OF RH AND LARGE SIZE TRU/TRUM PROCESSING FACILITY (A FINAL ACQUISITION SCHEDULE FOR THIS FACILITY WILL BE ESTABLISHED AS AN INTERIM MILESTONE NO LATER THAN DECEMBER 2000).
M-091-12	12/31/2005	COMPLETE THERMAL TREATMENT AND DISPOSAL OF AN ADDITIONAL 360 CUBIC METERS OF CONTACT HANDLED LLMW. THIS BRINGS THE CUMULATIVE TOTAL TO AT LEAST 600 CUBIC METERS OF CONTACT HANDLED LLMW THERMALLY TREATED AND DISPOSED OF:
M-091-12A	12/31/2002	COMPLETE THERMAL TREATMENT AND DISPOSAL OF AT LEAST 240 CUBIC METERS OF CONTACT HANDLED LLMW.
M-091-14-T01	10/31/2003	AWARD COMMERCIALIZATION CONTRACT(S) FOR TREATMENT OF RH AND LARGE SIZE LLMW PER APPROVED LLMW/GTC3 PMP AND ASSOCIATED AGREEMENT CHANGE REQUESTS.
M-091-15	06/30/2008	COMPLETE ACQUISITION OF FACILITIES AND INITIATE TREATMENT OF RH AND LARGE CONTAINER (CH) LLMW.
M-091-19-T01	09/30/2002	COMPLETE PHYSICAL ACTIVITIES AT T PLANT NECESSARY TO STORE FLOOR AND PIT SLUDGE.
M-091-20	12/31/2002	T PLANT IS READY TO RECEIVE THE FIRST CANISTER OF K BASINS FLOOR AND PIT SLUDGE.
M-091-21-T01	11/29/2003	COMPLETE PHYSICAL ACTIVITIES AT T PLANT NECESSARY TO STORE CANISTER AND FUEL WASH SLUDGE.
M-091-22	02/29/2004	T PLANT IS READY TO RECEIVE CANISTER AND FUEL WASH SLUDGE FROM K BASINS.
M-092-00	TBD	COMPLETE ACQUISITION OF NEW FACILITIES, MODIFICATION OF EXISTING FACILITIES, AND/OR MODIFICATION OF PLANNED FACILITIES NECESSARY FOR THE STORAGE, TREATMENT/PROCESSING, AND DISPOSAL OF HANFORD SITE CESIUM AND STRONTIUM CAPSULES (Cs/Sr), BULK SODIUM (Na), AND 300 AREA SPECIAL WASTE (SCW).
M-092-01	12/31/2009	COMPLETE COMMERCIAL DISPOSITION AND/OR ACQUISITION OF NEW FACILITIES, MODIFICATION OF EXISTING FACILITIES, AND/OR MODIFICATION OF PLANNED FACILITIES NECESSARY FOR SITEWIDE CONSOLIDATION AND STORAGE PRIOR TO COMMERCIAL USE OR

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
		TREATMENT AND/OR REPACKAGING BY DOE TWRS.
M-092-05	06/30/2003	INCLUSION OF HANFORD SITE Cs/Sr "TREATMENT AND/OR REPACKAGING PARAMETERS" IN DOE TWRS PHASE II REQUEST FOR PROPOSALS (TREATMENT AND/OR REPACKAGING OF ALL REMAINING Cs/Sr).
M-092-06-T02	09/30/2006	COMPLETE THE DISPOSAL/OR DISPOSITION OF APPROXIMATELY 135 METRIC TONS OF UNIRRADIATED CONTAMINATED FUEL LOCATED IN THE 300 AREA AND 5 METRIC TONS OF MISCELLANEOUS URANIUM SOURCE MATERIALS LOCATED IN ALL 300 AND 200 AREA FUEL SUPPLY SHUTDOWN FACILITIES, AND COMPLETE DISPOSAL/DISPOSITION OF APPROXIMATELY 825 METRIC TONS OF UN-IRRADIATED FUEL SOURCE MATERIALS LOCATED IN THE 300 AREA FUEL SUPPLY SHUTDOWN FACILITIES.
M-092-12	09/30/2006	COMPLETE ACQUISITION OF NEW FACILITIES, MODIFICATION OF EXISTING FACILITIES, AND/OR MODIFICATION OF PLANNED FACILITIES NECESSARY FOR CONSOLIDATED STORAGE PRIOR TO DISPOSAL OF HANFORD SITE 300 AREA SPECIAL CASE WASTE (SCW).
M-092-16	09/30/2006	COMPLETE REMOVAL AND TRANSFER, AND INITIATE STORAGE OF PHASE III 300 AREA SCW WASTE AND MATERIALS. PHASE III INVENTORY WILL CONSIST OF, ANY REMAINING 300 AREA SCW WASTES AND MATERIALS.
M-093-00	TBD	COMPLETE FINAL DISPOSITION OF ALL 100 AREA SURPLUS PRODUCTION REACTOR BUILDINGS. 100 AREA SURPLUS PRODUCTION REACTOR BUILDINGS CONSIST OF THE FOLLOWING: 105-D, 105-DR, 105-H, AND 105/109-N (ECOLOGY LEAD), AND 105-B, 105-C, 105-F, 105-KE, AND 105-KW (EPA LEAD).
M-093-06-T01	TBD	SUBMIT B REACTOR SURVEILLANCE AND MAINTENANCE PLAN FOR EPA APPROVAL IN PART. THIS TARGET WILL BE MODIFIED TO A SPECIFIC INTERIM MILESTONE DATE ON THE COMPLETION OF M-93-05.
M-093-10	07/31/2003	SUBMIT 105-F SURVEILLANCE AND MAINTENANCE PLAN FOR EPA APPROVAL IN PART.
M-093-11	09/30/2003	COMPLETE 105-F INTERIM SAFE STORAGE. THIS MILESTONE INCLUDES THE COMPLETION OF ALL ACTIVITIES NECESSARY TO PLACE THE 105-F REACTOR FACILITY IN A SAFE STORAGE MODE IN PREPARATION FOR FINAL DISPOSITION (CONSISTENT WITH AN APPROVED S&M PLAN AND PROJECT DESIGN REPORT). THE ISS OF F REACTOR INCLUDES THE DISMANTLEMENT OF ALL 105-F FACILITY STRUCTURES OUTSIDE THE REACTOR PRIMARY SHIELD WALL. THESE ACTIVITIES INCLUDE HAZARD STABILIZATION, ASBESTOS ABATEMENT, FACILITY DECONTAMINATION, PIPE-CUTTING, FUEL BASIN CLEAN OUT, AND STRUCTURE REMOVAL TO THE PRIMARY SHIELD WALL.
M-093-12	02/28/2002	ISSUE 105-DR DISPOSITION COMPETITIVE PROCUREMENT PACKAGE FOR ASCERTAINING THE MOST EFFECTIVE AND EFFICIENT APPROACH TO FEIS ROD SELECTED ALTERNATIVE IMPLEMENTATION.
M-093-14	06/30/2003	INITIATE NEGOTIATION OF REMAINING SURPLUS REACTOR DISPOSITION SCHEDULES.
M-093-15	12/31/2003	COMPLETE NEGOTIATION OF REMAINING SURPLUS REACTOR DISPOSITION SCHEDULES.
M-093-16-T01	09/30/2005	COMPLETE 105-DR REACTOR INTERIM SAFE STORAGE. COMPLETION OF THIS TARGET DATE INCLUDES THE COMPLETION OF ALL ACTIVITIES NECESSARY TO PLACE THE DR REACTOR FACILITY IN SAFE STORAGE MODE IN PREPARATION FOR FINAL DISPOSITION. SEE ALSO INTERIM MILESTONE M-93-12.
M-093-17-T01	09/30/2007	COMPLETE THE INTERIM SAFE STORAGE FOR THE 105-D REACTOR.
M-093-18-T01	09/30/2009	COMPLETE THE INTERIM SAFE STORAGE FOR THE 105-H REACTOR.
M-093-19-T01	09/30/2009	COMPLETE 105/109-N REACTOR ISS DESIGN.
M-093-20-T01	TBD	COMPLETE 105-N INTERIM SAFE STORAGE.

Table 9-1. Tri-Party Agreement Milestones Through 2028.

MILESTONE NUMBER	DUE DATE	DESCRIPTION
M-093-21-T01	TBD	COMPLETE 105-KW INTERIM SAFE STORAGE.
M-093-22-T01	TBD	COMPLETE 105-KE INTERIM SAFE STORAGE.

CDD	conceptual design document	PMP	project management plan
CH	contact handled	RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
DOE	U. S. Department of Energy	REC	Radiochemical Engineering Cell
DST	double-shell tank	RFI	RCRA facility investigation
EIS	Environmental Impact Statement	RH	remote handled
ERDF	Environmental Restoration Disposal Facility	RI/FS	remedial investigation/feasibility study
F&R	Functions and requirements	ROD	Record of Decision
FDC	Functional Design Criteria	SCW	special-case waste
HL	high level	SNF	spent nuclear fuel
HLW	high-level waste	SST	single-shell tank
IHLW	immobilized high-level waste	TBD	to be determined
ILAW	immobilized low-activity waste	TRU	transuranic
LAW	low-activity waste	TRUM	transuranic mixed
LLMW	low-level mixed waste	TSD	treatment, storage, and/or disposal
LLW	low-level waste	TWRS	Tank Waste Remediation System
MW	mixed waste	WIRD	waste information requirements document
NPL	National Priorities List	WMA	Waste Management Area
OU	operable unit		
PFP	Plutonium Finishing Plant		

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